Environmental Assessment in Canada

Directory of University Teaching and Research 1985-1986

Federal Environmental Assessment Review Office

Évaluation environnementale au Canada

Répertoire des cours et de la recherche universitaires 1985-1986

Bureau fédéral d'examen des évaluations environnementales

Canada

86-06410/

© Minister of Supply and Services Canada 1986

Cat. No. En104-5/1986

ISBN 0-662-54605-9

© Ministre des Approvisionnements et Services Canada 1986

N° de cat. En104-5/1986

ISBN 0-662-54605-9

Environmental Assessment in Canada

Directory of University Teaching and Research 1985-1986

Federal Environmental Assessment Review Office

Évaluation environnementale au Canada

Répertoire des cours et de la recherche universitaires 1985-1986

Bureau fédéral d'examen des évaluations environnementales

ACKNOWLEDGEMENTS

This edition of the Directory was compiled and edited by Ann Simpson with the assistance of Lewis Yaeger. Many other individuals gave generously of their time in providing information and advice. We would like to thank all those who contributed to this common effort.

We would also like to express a special word of thanks both to Robert Boudreault of la Direction des évaluations environnementales, Ministère de l'Environnement du Québec and to his Office.

REMERCIEMENTS

La présente édition du Répertoire a été compilée et révisée par Ann Simpson, avec l'aide de Lewis Yaeger. De nombreuses autres personnes ont généreusement donné de leur temps en fournissant de l'information et des conseils et nous aimerions remercier tous ceux qui ont participé à cet effort commun.

Nous tenons à remercier tout spécialement M. Robert Boudreault de la Direction des évaluations environnementales, Ministère de l'Environnement du Québec et les membres de son bureau.

TABLE OF CONTENTS/TABLE DES MATIÈRES

Page

Acknowledgements/Remerciements

Introduction/Introduction 2

Editorial Note/Note de la rédaction 6

Acadia University 9

University of Alberta 10

Athabasca University 12

Brandon University 13

University of British Columbia 14

Brock University 18

University of Calgary 19

Carleton University 25

Concordia University 28

Dalhousie University 29

École Polytechnique de Montréal 32

University of Guelph 34

Holland College 38

Lakehead University 39

Laurentian University 40

Université Laval 41

McGill University 44

McMaster University 47

University of Manitoba 50

Memorial University of Newfoundland 52

Université de Moncton 56

Université de Montréal 57

University of New Brunswick 61

Nova Scotia College of Art and Design 63

University of Ottawa/Université d'Ottawa 65

Université du Québec à Chicoutimi 67

Université du Québec à Montréal 69

Université du Québec à Rimouski 73

Université du Québec à Trois-Rivières 74

Université du Québec — Institut national de la recherche scientifique (INRS) 76

Queen's University 79

University of Regina 81

Ryerson Polytechnical Institute 83

St. Mary's University 85

University of Saskatchewan 86

Université de Sherbrooke 88

Simon Fraser University 90

Technical University of Nova Scotia 92

University of Toronto 94

Trent University 99

University of Victoria 102

University of Waterloo 104

The University of Western Ontario 108

Wilfrid Laurier University 111

University of Windsor 113

York University 116

CEARC Graduate Student Research Contracts 1985-1986 and 1986-1987/Contrats de recherche du CCREE pour diplômés universitaires, 1985-1986 et 1986-1987 119

Bibliography/Bibliographie 124

Student Papers/Écrits d'étudiants 143

INTRODUCTION

Since Environmental Impact Assessment (EIA) was first discussed in the early 1970s, it has come to be accepted by both governments and the private sector as a means of improving project planning and decision-making. The Canadian academic community has also shown a keen interest in the application and development of EIA.

An important feature of EIA is its multidisciplinary character: it deals not only with the biophysical and engineering aspects of resource-development projects, but also with their social and economic implications. In fact, social impact assessment (SIA) has become a field of growing importance.

There are few universities in Canada without courses that relate somehow to EIA/SIA. Because impact assessment draws from a wide range of disciplines, it can be difficult to clearly define the relevance of a given course to EIA. In this third edition of the Directory, we have attempted to distinguish between courses that deal fundamentally with the theory and application of EIA and those that either touch on EIA as part of the study of a specific discipline or cover subject material that would be useful in the performance of an actual impact assessment (i.e., the tools of EIA). For the former, descriptions of course content are provided, while information on the latter is presented in short form (course number, title and instructor) only. This approach is intended to provide the reader with an appreciation of the full range of courses available while keeping the Directory to a manageable length.

This Directory is part of a wider program sponsored by two federal agencies, the Federal Environmental Assessment Review Office (FEARO) and the Canadian Environmental Assessment Research Council (CEARC), to improve EIA methodology and to disseminate information drawn from experience. FEARO administers the Environmental Assessment and Review Process (EARP) on behalf of the Minister of the Environment. As directed by Cabinet, FEARO is principally responsible for producing policy and providing guidelines, procedures and administrative advice to participating agencies and to the public on the operation of EARP.

CEARC was created in January 1984 by the federal Minister of the Environment to advise governments, industry and universities on ways to improve the scientific, technical and procedural basis for EIA. The Council has twelve members drawn from across Canada and the various sectors involved in EIA. CEARC's objective is to contribute to the quality of decision-making which impacts on the natural and social environment in Canada by:

- advising on the need for and adequacy of research related to environmental impact assessment;

- reviewing and commenting on the use of scientific information about the environment and the place of environmental impact assessment in planning and development; and

- encouraging new ideas and research directed towards improving the concept, practice and effectiveness of an assessment of social and environmental impacts.

INTRODUCTION

Depuis qu'on a commencé à parler de l'évaluation des incidences environnementales (EIE) au début des années 70, l'idée a de plus en plus fait son chemin dans les deux paliers de gouvernement et le secteur privé, en tant que moyen d'améliorer la planification des projets et le mécanisme décisionnel. La collectivité universitaire canadienne s'est également intéressée vivement à l'application et à la mise au point des EIE.

Une des caractéristiques importantes de l'EIE est sa multidisciplinarité: elle touche non seulement les aspects techniques et biophysiques des projets de mise en valeur des ressources, mais également leurs incidences sociales et économiques. En fait, l'évaluation des incidences sociales (EIS) a pris de plus en plus d'importance.

Rares sont les universités canadiennes qui n'ont pas de cours liés d'une façon ou d'une autre aux EIE/EIS. Compte tenu que l'évaluation des incidences fait appel à de nombreuses disciplines, il peut être difficile d'établir la pertinence d'un cours par rapport aux EIE. Dans cette troisième édition du Répertoire, nous avons essayé de départager les cours qui touchent fondamentalement la théorie et l'application des EIE et ceux qui touchent les évaluations dans le cadre de l'étude d'une discipline particulière ou couvrent des matières qui seraient utiles dans l'exécution proprement dite d'une évaluation des incidences (les outils des EIE). Dans le cas des premiers, nous donnons une description du cours et, pour les seconds, une information abrégée (numéro de cours, titre et responsable). Nous avons voulu, par ce moyen, faire en sorte que le lecteur puisse avoir une idée valable de tous les types de cours qui existent, tout en n'alourdissant pas trop le Répertoire.

Le présent Répertoire s'inscrit dans le cadre d'un vaste programme parrainé par le Bureau fédéral d'examen des évaluations environnementales (BFEEE) et le Conseil canadien de la recherche sur l'évaluation environnementale (CCREE) et qui vise à améliorer la méthodologie des EIE et à diffuser l'information obtenue par expérience. Le Bureau fédéral d'examen des évaluations environnementales est responsable de l'administration du Processus fédéral d'évaluation et d'examen en matière d'environnement. Suivant les directives du Conseil des ministres, le Bureau a la responsabilité d'élaborer des politiques et de fournir aux organismes participant au Processus ainsi qu'au public les directives, procédures et informations d'ordre administratif concernant le fonctionnement du Processus.

Le CCREE a été créé en janvier 1984 par le ministre fédéral de l'Environnement afin de conseiller les gouvernements, l'industrie et les universités sur les moyens d'améliorer les aspects méthodologiques, scientifiques et techniques des EIE. Le Conseil compte douze membres représentant les régions du Canada et les divers secteurs qui s'occupent des EIE. L'objectif du Conseil est de faire en sorte que le milieu naturel et social du Canada soit meilleur, par les moyens suivants :

- faire ressortir la nécessité et la pertinence de la recherche liée à l'évaluation des incidences environnementales;

Within the bounds of these objectives, the Council has reviewed the current practice of EIA in Canada and identified areas that it judged to need special study. These are:

- prediction and monitoring,
- risk analysis and management of uncertainty,
- EIA, management and decision-making,
- improvements in administrative procedures,
- mitigation and compensation, and
- post-project evaluation.

CEARC provides financial assistance to students working in EIA-related areas. At least ten percent of its annual budget is allocated to graduate student research contracts. A list of recipients for 1985-1986 and 1986-1987 can be found at the end of this volume.

Data for this edition of the Directory were obtained by means of a questionnaire and by telephone; in all, more than 400 academics across the country were contacted. In general, the onus was left upon questionnaire recipients to inform us of any changes in courses or research activities that might have occurred since the second edition. We thank all those who participated in the project.

• faire des études et donner son avis sur l'utilisation de l'information scientifique relativement à l'environnement et à la place de l'évaluation des incidences environnementales dans la planification et l'aménagement;

• favoriser les idées et recherches nouvelles visant à améliorer la conception, l'exécution et l'efficacité des évaluations des incidences sociales et environnementales.

Dans cette orientation, le Conseil a étudié la façon dont les EIE sont actuellement menées, au Canada, et a dégagé et classé par priorité les points qui, à son avis, doivent faire l'objet d'études spéciales :

- prévision et surveillance
- analyse des risques et gestion de l'incertitude
- EIE, gestion et prise de décisions
- amélioration des modalités administratives
- réduction des effets et indemnisation
- évaluation post-projet.

Le Conseil donne de l'aide financière aux étudiants qui travaillent dans des domaines qui touchent les EIE. Il consacre au moins dix pour cent de son budget annuel à des contrats de recherche avec des étudiants de deuxième cycle. Le lecteur trouvera à la fin du Répertoire la liste des récipiendaires pour 1985-1986 et 1986-1987.

L'information contenue dans la présente édition du Répertoire a été obtenue au moyen d'un questionnaire et d'appels téléphoniques. Au total, nous avons communiqué avec plus de 400 universitaires, dans l'ensemble du pays. En règle générale, nous avons laissé aux destinataires des questionnaires la tâche de nous informer des changements éventuels dans les cours ou activités de recherche depuis la deuxième édition. À tous ceux qui ont pris part au projet, nous adressons nos plus vifs remerciements.

EDITORIAL NOTE

This publication has been organized by institution in alphabetical order. In most cases the section for each institution is divided into three parts: Teaching; Individual Research and Work; and Program Activities.

TEACHING:

Course No.	Course Level (Indicated by year number or G for graduate)	COURSE TITLE Description Instructor

INDIVIDUAL RESEARCH AND WORK:

Name of Researcher (numbers in parentheses corresponding to entries in Bibliography)	DEPARTMENT/SCHOOL Description of research activities

PROGRAM ACTIVITIES:

A. Program areas in which EIA or directly related activities are undertaken.

B. Whether or not the institution offers a core program or streaming in EIA.

C. Other work or events related to EIA occurring on campus.

The onus was placed on the questionnaire respondents to supply course and research information, and to the extent possible we have tried to present material in the form in which it was received. Course information was subjected to rigorous review, and full course descriptions have been provided only for those courses judged to deal fundamentally with the theory and methodology of EIA. For entries on individual research and publications, our policy was to allow more latitude because much of the research listed could provide a basis for activities related to EIA and be useful to individuals seeking information in specialized subjects.

The style follows standard academic usage. Entries appear in the language in which they were received. Those sections which are the result of editorial interpretation or which we prepared (with concurrence of the university) appear in both official languages as required by federal policy.

NOTE DE LA RÉDACTION

La présente publication contient une liste des universités par ordre alphabétique anglais. La section qui concerne chaque université a été subdivisée en trois parties : Cours, Recherche et Travaux Personnels et Activités.

COURS :

N° du cours	Niveau	TITRE Description Chargé de cours

RECHERCHE ET TRAVAUX PERSONNELS :

Nom du chercheur (Les chiffres entre parenthèses correspondent à ceux de la bibliographie)	Département / École Description

ACTIVITÉS :

A. Programmes dans lesquels on effectue des travaux d'évaluation des impacts environnementaux ou sociaux.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales ou, à défaut, une orientation générale des étudiants en ce domaine.

C. Activités se rapportant à l'évaluation des incidences environnementales (EIE).

Nous avons laissé à ceux qui ont répondu au questionnaire le soin de fournir l'information sur les cours et la recherche et, dans la mesure du possible, nous avons essayé de présenter les renseignements tels que nous les avons reçus. L'information sur les cours a été soigneusement vérifiée; seuls ont été décrits en détail les cours qui, à notre avis, traitaient fondamentalement de la théorie et de la méthodologie des EIE. Dans le cas des inscriptions sur les recherches et publications personnelles, nous avons cru bon de permettre une plus grande latitude, car la plus grande partie des travaux de recherche recensés peuvent servir de base à des activités liées au EIE et être utiles à ceux qui recherchent de l'information sur des sujets spécialisés.

En ce qui concerne la langue utilisée, les renseignements fournis par les universités ont été présentés tels que reçus, conformément à la coutume universitaire. Dans les sections qui résultent d'une interprétation de la rédaction ou que cette dernière a préparées, les renseignements sont présentés dans les deux langues officielles, conformément à la politique fédérale.

ACADIA UNIVERSITY

Location/Endroit: Wolfville, Nova Scotia

Mailing Address/ Adresse: Acadia University
Wolfville, Nova Scotia
BOP IXO

Telephone/ Téléphone: (902) 542-2201

TEACHING:

Department of Biology

BIOL 4413 (4) WILDLIFE MANAGEMENT

BIOL 4423

The environmental assessment process is covered in these courses. U.S. and Canadian background and federal involvement including legislation. General processes and legislation in provinces. Examples and case studies. The class is involved in drafting a proposal based on a proposed development. Instructor: D. Dodds.

BIOL 4543 (4) ESTUARINE BIOLOGY

Instructor: G. Daborn.

BIOL 4573 (4) LIMNOLOGY

Instructor: G. Daborn/M. Brylinsky.

Note: Environmental assessment is addressed towards the end of the Limnology and Estuarine Biology courses, primarily through case studies of developmental impact upon water bodies in the Atlantic region.

INDIVIDUAL RESEARCH AND WORK:

Daborn, G. (83, 84) BIOLOGY

Impact of tidal power stations on the environment.

Dodds, D. BIOLOGY

Review of Salmon River Hydro Project EIS; impact assessment in recreational development; review of potential impacts by hydroelectric development.

PROGRAM ACTIVITIES:

A. 1) *Department of Biology*

EIA is not a major area of teaching or research in the department. However, several faculty members have been involved in the past. They are currently only indirectly involved.

2) *Acadia Centre for Estuarine Research*

The Centre is involved in environmental impact studies associated with tidal power developments.

3) *Acadia University Institute*

The Institute carries out scientific research and socio-economic studies of energy-related developments.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: Evaluation of environmental impact assessment related to Annapolis Tidal Power Development.

ACTIVITÉS :

A. 1) *Department of Biology*

L'EIE n'est pas un domaine d'enseignement ou de recherche important de ce département. Toutefois, plusieurs professeurs ont déjà travaillé dans ce domaine; actuellement, ils n'y travaillent qu'indirectement.

2) *Acadia Centre for Estuarine Research*

Le centre réalise des études des incidences environnementales des centrales marémotrices.

3) *Acadia University Institute*

L'institut procède à des recherches scientifiques et à des études socio-économiques sur les aménagements de production d'énergie.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Appréciation de l'évaluation des incidences environnementales de la centrale marémotrice Annapolis.

UNIVERSITY OF ALBERTA

Location/Endroit: Edmonton, Alberta

Mailing Address/ Adresse: The University of Alberta
Edmonton, Alberta
T6G 2E2

Telephone/ Téléphone: (403) 432-3111

TEACHING:

Department of Economics

INT D 369 (3) ECONOMICS OF THE ENVIRONMENT

Economic growth and deterioration of the environment; types and causes of environmental deterioration; theory, policy, and measurement relating to environmental deterioration; recreation economics; and current Canadian environmental topics.

Department of Forest Science

FOR 301 (3) SPRING CAMP

Instructor: H.G. Pratley.

FOR 311 (2) FOREST MEASUREMENTS II

Instructor: J.D. Heidt.

FOR 503 (G) VEGETATIVE RECLAMATION OF DISTURBED FOREST LAND

This course emphasizes environmental impact assessment of proposed resource developments, particularly related to coal and petroleum. Reclamation techniques from a vegetation standpoint are described in detail. Instructor: D.G. Walker.

Department of Mineral Engineering

MNL E 508 (3) ENVIRONMENTAL ASPECTS OF MINERAL OPERATIONS

Environmental impacts of mining and mineral processing. Legislation respecting conservation of soil, water and air quality. Procedures for safe disposal of solid, liquid and gaseous wastes from mining and mineral processing plants. Land reclamation and revegetation methods. Environmental aspects of stockpiling and transporting extracted and/or processed minerals. Case histories from coal and oil sands development.

Department of Recreation and Leisure Studies

REC 435 (3/4) OUTDOOR RECREATION RESOURCES

Instructor: G.S. Swinnerton.

INDIVIDUAL RESEARCH AND WORK:

Butler, J.R. FOREST SCIENCE

Impacts of wildland recreation on wildlife.

Dudas, M.J. SOIL SCIENCE

EIA and land reclamation.

McGill, W.B. SOIL SCIENCE

EIA and land reclamation.

Nyborg, M. SOIL SCIENCE

EIA and land reclamation.

Pluth, D.J. SOIL SCIENCE

EIA and land reclamation.

Swinnerton, G. (356) RECREATION AND LEISURE STUDIES

Impact of recreation on land use.

PROGRAM ACTIVITIES:

A. 1) *Boreal Institute for Northern Studies*

A research body reporting to the Vice-President (Research). It acts as coordinator of campus interests in northern research.

2) *Faculty of Agriculture and Forestry*

Professionally oriented environmental program; environmental assessment is approached as it relates to natural systems. Particular emphasis is given to agricultural and forest lands.

B. EIA Core Program or Streaming? None indicated.

C. Activities related to EIA: None indicated.

ACTIVITÉS :

A. 1) *Boreal Institute for Northern Studies*

Institut de recherche qui se rapporte au vice-président de la recherche et qui coordonne les activités de l'université en matière de recherches sur le Nord.

2) *Faculty of Agriculture and Forestry*

Programme sur l'environnement débouchant sur une profession; l'évaluation des incidences environnementales est abordée du point de vue des systèmes naturels. L'emphase est placée sur les terres agricoles et forestières.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

ATHABASCA UNIVERSITY

Location/Endroit: Athabasca, Alberta

Mailing Address/ Adresse: P.O. Box 10,000
Athabasca, Alberta
T0G 2R0

Telephone/ Téléphone: (403) 675-6111

TEACHING:

Science

BIOL 203 (1) WORLD ECOLOGY: THE SCIENTIFIC CONTEXT

Coordinator: R.G. Holmberg.

ENVS 323 (2) ECOLOGICAL PRINCIPLES FOR RESOURCE PLANNERS AND MANAGERS

Coordinator: T.S. Bakshi.

ENVS 347 (2) ENVIRONMENTAL IMPACT ASSESSMENT

The course introduces students to the requirements for and methods of preparation of an environmental impact assessment (EIA) report. The historical development of EIA, and legal and administrative requirements for EIA studies are explained. The work of a natural resource manager and planner in preparing such a report is reviewed. Home study. Coordinator: T.S. Bakshi.

Social Sciences

GEOG 317 (2) MAN AND ENVIRONMENT

Coordinator: B. Spronk.

INDIVIDUAL RESEARCH AND WORK:

None indicated.

PROGRAM ACTIVITIES:

A. Athabasca University students do most or all of their learning at home, using specially designed home study materials. All home study students are assigned a telephone tutor to whom they have toll-free access from anywhere in Canada. In some cases, courses are supplemented by radio and television programs, audiotapes, seminars, workshops, or teleconference sessions.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. Les étudiants de l'université travaillent presque toujours à domicile, en utilisant du matériel spécialement conçu. Tous les étudiants à domicile ont un tuteur téléphonique avec qui ils peuvent communiquer sans frais à travers le Canada. Dans certains cas, on complète les cours par des programmes de radio ou de télévision, des bandes magnétiques, des séminaires, des ateliers, ou des sessions de conférences téléphoniques.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

BRANDON UNIVERSITY

Location/Endroit: Brandon, Manitoba

Mailing Address/ Adresse: Brandon University
Brandon, Manitoba
R7A 6A9

Telephone/ Téléphone: (204) 728-9520

TEACHING:

Department of Geography

38.292 (2) GEOGRAPHY OF WATER RESOURCES

Instructor: J. Welsted.

38.294 (2) RECREATIONAL RESOURCES AND PLANNING

Instructor: R.C. Rounds.

38.392 (3) RENEWABLE RESOURCE MANAGEMENT

A study of man-land relationships with emphasis on theory of resource management. A multi-factorial approach is used to establish a framework for analyzing resource exploitation. Emphasis is placed on renewable resources with concentration on public resources. Conflicting ideologies and comparative resource programs are examined. Instructor: R.C. Rounds.

38.393 (3) LAND USE PLANNING

An examination of the history and problems of land use. A study of the principles and practices of regional planning. The fundamentals involved in any approach to planning will be illustrated by means of a Canadian case study relating to economics, resource development, watershed conservation, changing land use, and characteristics of site and situation. Instructor: R.C. Rounds.

38.479 (4) ENVIRONMENTAL PERCEPTION AND BEHAVIOUR

It is becoming increasingly clear that to understand environmental decision-making, knowledge of people's environmental perceptions and behaviour is essential. This is because decisions to modify or change the environment are based not so much on the environment as it is but rather on the environment as it is perceived by the decision-makers. This course looks at the theory and practice of the geographical aspects of this interdisciplinary field of study. Instructor: J.C. Everitt.

INDIVIDUAL RESEARCH AND WORK:

Rounds, R.C. (294, 295) GEOGRAPHY

Ecological basis for environmental assessment; carrying capacity; biophysical impact.

PROGRAM ACTIVITIES:

A. *Department of Environmental Science*

A major in Environmental Science is offered which allows interested students an opportunity to pursue a wide range of studies related to the physical and human environment.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. *Department of Environmental Science*

Une spécialité en sciences de l'environnement est offerte aux étudiants intéressés qui leur permettra de poursuivre toute une gamme d'études se rapportant à l'environnement physique et humain.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

UNIVERSITY OF BRITISH COLUMBIA

Location/Endroit: Vancouver, British Columbia

Mailing Address/ Adresse: The University of British Columbia
2075 Wesbrook Mall
Vancouver, British Columbia
V6T IZ2

Telephone/ Téléphone: (604) 228-2211

TEACHING:

School of Community and Regional Planning

PLAN 504 (G) ECOLOGY OF URBAN REGIONS

This course provides a bio-ecological perspective on urban systems and particularly their impacts on the natural environment. The purpose is to develop a general framework for the application of basic ecological theory and principles to environmental management and planning, including such techniques as impact assessment.

PLAN 505 (G) SOCIAL PLANNING POLICY

PLAN 514 (G) ENVIRONMENTAL IMPACT ASSESSMENT

Current issues, approaches and techniques pertaining to environmental impact assessment in general, and social impact assessment in particular.

PLAN 532 (G) PLANNING FOR WATER RESOURCES MANAGEMENT

Instructor: A. Dorcey.

PLAN 550 (G) PLANNING FOR NATURAL RESOURCES MANAGEMENT.

Instructor: A. Dorcey.

Department of Geography

GEOG 315 (3) ENVIRONMENTAL INVENTORY AND CLASSIFICATION

Instructor: M. North.

GEOG 366 (3) ENVIRONMENT AND RESOURCES

Instructor: M. Church.

GEOG 415 (4) ENVIRONMENTAL QUALITY AND IMPACT ASSESSMENT

Environmental quality from the standpoints of human perception, government standards, methods of measurement, impact assessment and strategies for the enhancement of quality. Case studies are drawn primarily from North America. Instructor: O. Slaymaker.

GEOG 417 (4) PHYSICAL ENVIRONMENT OF THE CITY

The impact of urbanization upon the natural environment and vice versa. Aspects of urban climate, soils, hydrology, physiography, vegetation and wildlife. Urban metabolism, pollution, waste management and natural hazards. Instructor: T. Oke.

GEOG 418 (4) ENVIRONMENTAL CHANGE

Instructor: D. Steyn.

GEOG 466 (4) GEOGRAPHY AND RESOURCE MANAGEMENT

Instructor: J. Chapman.

Faculty of Law

LAW 472 (4) ENVIRONMENTAL LAW

Department of Economics

ECON 370 (3) BENEFIT-COST ANALYSIS AND THE ECONOMICS OF PROJECT EVALUATION

Techniques and problems in benefit-cost analysis of public projects. Examination of alternative approaches to public decision-making such as cost- effectiveness analysis and multiple objective frameworks. Case studies of projects in the areas of natural resources, the environment, human resources, public services, and transportation.

ECON 471 (4) ECONOMICS OF RENEWABLE RESOURCES

Department of Civil Engineering

CIVL 567 (G) WATER POLLUTION CONTROL ENGINEERING II

Industrial design waste survey and design problems. Appraisal and analysis of existing water quality management systems and water quality and effluent regulatory systems. Students are introduced to the difference between EIA and pollution control and study both federal and provincial EIA processes. They also do work in cost-benefit analysis. Instructor: J. Atwater.

Department of Oceanography

OCEANOGRAPHY 410 MARINE POLLUTION

Instructor: T.R. Parsons

INDIVIDUAL RESEARCH AND WORK:

Boothroyd, P. (32, 33, 34, 35, 36, 37, 38) — SCHOOL OF COMMUNITY AND REGIONAL PLANNING

Ongoing research on EIA/SIA processes in western and northern Canada, and on substantive impacts of industrial development on remote communities.

Carley, M. (56, 57, 58, 59, 60) — SCHOOL OF COMMUNITY AND REGIONAL PLANNING

A social impact monitoring framework for the Beaufort Sea development.

Dorcey, A. (97) — WESTWATER RESEARCH CENTRE

Research on the management of coastal resources; an analytical framework for planning in the management of fishery-mariculture resources on the coast of British Columbia; reform of the governing of Canada's Pacific coast resources.

Golding, D.L. — FACULTY OF FORESTRY

Environmental impact of forest harvesting on water resources for Greater Vancouver Water District.

Golob, D. — WESTWATER RESEARCH CENTRE

Interest involvement in the planning process through an examination of the Fraser River Estuary Study (M.A. research).

Kimmins, J.P. — FACULTY OF FORESTRY

Environmental impact of alternative systems of forest site preparation.

Marchak, P. — ANTHROPOLOGY AND SOCIOLOGY

The social and environmental impacts of the forest industry in British Columbia.

Marchak, P. — ANTHROPOLOGY AND SOCIOLOGY

Guppy, N.

McMullan, J. and others — Fish and Ships Project: The social and environmental impacts of the fishing industry in British Columbia.

Parsons, T.R. — OCEANOGRAPHY

Consulting for FEARO, Utah Mines, U.S. Borax and other agencies concerned with problems of marine disposal.

Rees, W.E. — SCHOOL OF COMMUNITY AND REGIONAL

(38, 283, 284, 285) — PLANNING

Ongoing research on aspects of EIA/SIA as applied at the federal level in the Beaufort Sea and at the provincial level (B.C. Northeast Coal Development).

Taylor, F.J.R. — OCEANOGRAPHY

Current research involves studies on the regulation of red tides in B.C. coastal waters.

PROGRAM ACTIVITIES:

A. 1) *Westwater Research Centre*

A research centre with an interdisciplinary program of research on the design of policies and institutions for managing coastal resources. The research is supported by government agencies, foundations and industry. Many of the component studies consider the procedures and methods of EIA and SIA.

2) *School of Community and Regional Planning*

A graduate school which as part of its program allows students the opportunity to examine questions relating to EIA and SIA. Most research activity relating to EIA/SIA can be found being undertaken by members of this School and the Westwater Research Centre.

3) *Faculty of Forestry*

EIA is dealt with as it applies to forest management.

4) *The Centre for Continuing Education*

Offers a directed independent studies course entitled Environmental Assessment in Regional Planning. The course text is a three volume manual prepared and edited by W.E. Rees (School of Community and Regional Planning).

5) *Department of Anthropology and Sociology*

SIA and EIA as they may apply to the fishing industry of British Columbia.

6) *Ocean Studies Council (Faculty of Graduate Studies)*

The Council, which consists of faculty members drawn from a number of disciplines at the University of British Columbia, promotes interdisciplinary research on ocean matters within the University. Representatives are from: Animal Resource Ecology, Asian Research, Bio-Resource Engineering, Commerce, Economics, Forestry, Geography, International Relations, Law, Mathematics, Oceanography, Political Science, Slavonic Studies, and the Westwater Research Centre.

B. EIA Core Program or Streaming?

No, however undergraduate students interested in EIA are encouraged to take courses which will give them the tools to work at the graduate level. Courses relate to subjects such as the quality of information collected, methodologies, and so on. At the graduate level, students may follow a program making use of the facilities of study and research provided by the School of Community and Regional Planning and the Westwater Research Centre.

C. Activities Related to EIA:

1) Westwater Research Centre arranges seminars, workshops and conferences related to EIA.

2) Professors W. Rees, P. Boothroyd and C. Weaver (School of Community and Regional Planning) received (1982-83) a three-year grant from the Donner Canadian Foundation to study various "Planning and Policy Implications of Northern Megaprojects".

ACTIVITÉS :

A. 1) *Westwater Research Centre*

Centre de recherche qui possède un programme interdisciplinaire de recherche sur la création de politiques et d'institutions visant la gestion des ressources riveraines. La recherche est subventionnée par des organismes gouvernementaux, des fondations et l'industrie. Beaucoup d'études portent sur les procédures et les méthodes d'évaluation environnementale.

2) *School of Community and Regional Planning*

École pour étudiants diplômés qui, dans le cadre de son programme, permet aux étudiants de se familiariser avec des sujets qui se rapportent aux évaluations environnementales. La plupart des activités de recherche dans ce domaine sont entreprises dans cette école et au Westwater Research Centre.

3) *Faculty of Forestry*

On y étudie les évaluations environnementales en rapport avec l'aménagement forestier.

4) *The Centre for Continuing Education*

Offre un programme d'études indépendant et dirigé intitulé «Environmental Assessment in Regional Planning». La matière du cours est contenue dans un manuel en trois volumes préparé par W.E. Rees (School of Community and Regional Planning).

5) *Department of Anthropology and Sociology*

On y étudie l'évaluation environnementale et sociale en rapport avec l'industrie des pêches de la Colombie-Britannique.

6) *Ocean Studies Council (Faculty of Graduate Studies)*

Le conseil, composé de professeurs issus de diverses disciplines à l'université de la Colombie-Britannique, appuie au sein de l'université la recherche interdisciplinaire de sujets relatifs aux océans. Les représentants sont de : l'écologie des ressources animales, la recherche asiatique, l'ingénierie des ressources biologiques, le commerce, l'économie, la foresterie, la géographie, les relations internationales, le droit, les mathématiques, l'océanographie, les sciences politiques, les études slaves et le Westwater Research Centre.

B. Programme spécifique aux évaluations environnementales?

Non. Toutefois, on encourage les étudiants non diplômés, qui s'intéressent à l'évaluation environnementale, à suivre des cours qui leur serviront lorsqu'ils entreprendront des études supérieures. Les sujets traités dans ces cours sont la qualité des renseignements recueillis, les méthodes, etc. Une fois diplômés, les étudiants peuvent entreprendre un programme d'études et de recherches au School of Community and Regional Planning ainsi qu'au Westwater Research Centre.

C. Activités se rapportant aux évaluations environnementales :

1) Le Westwater Research Centre organise des séminaires, des ateliers et des conférences.

2) Les professeurs W. Rees, P. Boothroyd et C. Weaver du School of Community and Regional Planning ont reçu une subvention de trois ans de la fondation canadienne Donner pour faire des études sur la planification et la politique des grands projets du Nord.

BROCK UNIVERSITY

Location/Endroit: St. Catharines, Ontario

Mailing Address/ Adresse: Brock University
St. Catharines, Ontario
L2S 3A1

Telephone/ Téléphone: (416) 688-5550

TEACHING:

Institute of Urban and Environmental Studies

353 (3) ENVIRONMENTAL IMPACT ASSESSMENT

The development of EIA in Canada and other countries; methods of environmental impact analysis, the EIS; a review of Canadian government procedures; and examples of assessments on northern pipelines, hydroelectric and nuclear power stations. Instructor: F. Berkes.

INDIVIDUAL RESEARCH AND WORK:

Berkes, F. (21, 22) — INSTITUTE OF URBAN AND ENVIRONMENTAL STUDIES

Environmental impact of the James Bay hydroelectric project on estuarine fisheries and native fishermen; fishery resources and their allocation, and user-group interactions; consultant/technical advisor on the impacts of James Bay development.

Middleton, J. — INSTITUTE OF URBAN AND ENVIRONMENTAL STUDIES

Measuring stress and disturbance in ecosystems dominated by human activities.

PROGRAM ACTIVITIES:

A. Research is undertaken by members of the Institute of Urban and Environmental Studies and the Departments of Geography and Sociology.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: Seminars and workshops.

ACTIVITÉS :

A. Travaux de recherche entrepris à l'Institute of Urban and Environmental Studies et aux départements de géographie et sociologie.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Séminaires et ateliers.

THE UNIVERSITY OF CALGARY

Location/Endroit: Calgary, Alberta

Mailing Address/
Adresse: The University of Calgary
2500 University Drive, N.W.
Calgary, Alberta
T2N 1N4

Telephone/
Téléphone: (403) 220-5110

TEACHING:

Department of Psychology

PSYC 427 (4) ENVIRONMENTAL PSYCHOLOGY

Instructors: R. Dewar, B. Dunn.

Department of Sociology

SOC 359 (3) SOCIOLOGY OF NATURAL RESOURCE DEVELOPMENT

The social impact of resource development on communities, groups and institutions will be examined. The interaction of government, industry and local citizen involvement will be examined including social policy in resource development. Instructor: J. DiSanto.

SOC 515.01 (G) SOCIAL IMPACT ASSESSMENT

This is an advanced course in Special Problems in Applied Social Research.

Faculty of Environmental Design

EVDS 501 (4) RESOURCES AND ENVIRONMENTAL ENGINEERING

Techniques of surveying, development, management and conservation of resources. Terrain analysis using remote-sensed data. Energy resources and evaluation of power generation alternatives. Planning of major regional developments in terms of engineering, economic, ecologic and sociologic parameters. Environmental impact assessments. Instructor: R.D. Revel.

EVDS 623 (G) REGIONAL DEVELOPMENT PLANNING

Concepts and approaches to the study of regional development. Regional planning theories and methods. The role of project planning and impact assessments in regional development. Emphasis on Canadian national policy and Western Canadian policies. Instructor: D. Webster.

EVDS 649 (G) IMPACT ASSESSMENT

Biophysical, economic and social impact assessment will be reviewed in an integrated, interdisciplinary approach which will include lectures, studies of methodologies, theory and practical problems. Federal and various provincial impact assessment policies and procedures will be considered. Instructor: D. Thompson.

EVDS 675 (G) ENVIRONMENTAL LAW

This course covers various areas of law relevant to the environment, such as administrative law, common law, constitutional and criminal law. Topics covered include various regulatory techniques and judicial review thereof, individual remedies, procedures and requirements of environmental and social impact assessments. Instructor: P.S. Elder.

EVDS 707 (G) ECOLOGICAL MANAGEMENT IN LAND USE PLANNING

A studio course in which a real land use problem with a major ecological management component is taken on by the class as a consulting team. Problem definition, proposal preparation, and the complete study from regional biophysical and land use inventory through client presentations of interim and final results are completed within the term. The final report must include development recommendations and environmental management guidelines. Projects are drawn mainly from the resource development industry, although other potential clients are considered. Instructor: R.D. Revel.

EVDS 725 (G) TOPICS IN WILDLIFE MANAGEMENT AND RESOURCE DEVELOPMENT

Management theory and practice for nonconsumptive uses of wildlife.

Environmental impact and mitigation assessment dealing with wildlife. Instructor: V. Geist.

EVDS 747 (G) MANAGEMENT IN ENVIRONMENTAL SCIENCE

Instructor: D. Thompson.

EVDS 761.05 (G) IMPACT ASSESSMENT CASE STUDY

This studio (lab) is designed to allow students to do a detailed review of the impact assessment of a major project, putting into practice impact analysis and assessment methods, techniques and processes as they fit the particular case under study. Instructor: D. Thompson.

Department of Anthropology

ANT 538 (4) ECONOMIC DEVELOPMENT

Canadian Studies Program

CAN ST 309 (3) DEVELOPMENT OF THE CANADIAN NORTH

Department of Biology

BIO 421 (4) MANAGEMENT OF THE BIOSPHERE

The course is an examination of the role of the human population in the biosphere and of the consequences of interactions between our species and the planetary ecosystem. An interdisciplinary look at resources highlighting the use of EIA.

Department of Geography

GEOG 321 (3) ENVIRONMENTAL PROBLEMS AND RESOURCE MANAGEMENT

GEOG 397 (3) GEOGRAPHY OF THE NORTHLANDS

GEOG 519 (G) BIOPHYSICAL INVENTORY AND ANALYSIS

GEOG 617 (G) ADVANCED WILDLANDS ECOSYSTEMS

INDIVIDUAL RESEARCH AND WORK:

Abele, F. (1) — ARCTIC INSTITUTE OF NORTH AMERICA

Native and Social Issue Program: training which will enable northern native people to design social impact assessment studies and prepare submissions for regulatory hearings and public meetings; a major study of native employment training programs in northern Canada.

Bankes, N. (10,, 11) — FACULTY OF LAW

Impact assessment and management; environmental monitoring.

Barton, B. (12) — CANADIAN INSTITUTE OF RESOURCES LAW

Natural resources law: mining, surface rights, water, native water rights.

Boyd, E. — PSYCHOLOGY

Environmental impact of noise.

Corbett, R. — FACULTY OF ENVIRONMENTAL DESIGN

A bargaining and community development approach to social impact assessment (M.E.Des. research).

Cordes, L. — GEOGRAPHY

Environmental impact assessment.

Danielson, R.M. — KANANASKIS CENTRE

Ectomycorrhizal development in mine spoils; influence of ectomycorrhizal fungi on plant growth.

DiSanto, J. (135, 136, 137, 138) — SOCIOLOGY

Relationship of public participation to social breakdown and alienation in a major thermal power project; community relocation in energy resource development.

Dunn, B.	PSYCHOLOGY Environmental impact of noise.
Elder, P.S. (110, 111, 112, 113, 114, 115)	FACULTY OF ENVIRONMENTAL DESIGN EIA law in Canada.
Fleising, U. (135, 136, 137, 138)	ANTHROPOLOGY Social impact assessment. Increasingly concerned with biotechnology and its impact and management, cross-culturally.
Frideres, J. (134, 135, 136, 137, 138)	SOCIOLOGY Assessing social impact in the North; ethnic relations and impact in multi-ethnic communities; developing a methodology for assessing social impact.
Goldenberg, S. (135, 136, 137, 138, 146)	SOCIOLOGY Social impact assessment theory and methodology. Urban and industrial projects with increasing attention to organizational implications and ideological components and premises.
Hunt, C. (177, 178)	CANADIAN INSTITUTE OF RESOURCES LAW Environmental law and regulatory processes.
Kariel, H.	GEOGRAPHY Environmental impact of noise.
Keeping, J.	CANADIAN INSTITUTE OF RESOURCES LAW Public utility regulation.
Legge, A. (197)	KANANASKIS CENTRE Effects of sulphur gas emissions on forest ecosystems; development of air quality and biological monitoring systems; multidisciplinary research coordination.
Lucas, A. (62, 127, 178, 201)	FACULTY OF LAW Canadian Arctic Resources Committee; environmental law; fairness in public hearings.
Parkinson, D.	KANANASKIS CENTRE Nature, distribution and activity of microorganisms in natural soils; restoration of biological activity in severely disturbed soils.
Peake, E.	KANANASKIS CENTRE Carcinogenic hydrocarbons, organic compounds and particulate matter in the urban atmosphere and in industrial emissions; effects of oily waste sludges.
Ross, G.	FACULTY OF ENVIRONMENTAL DESIGN Environmental monitoring; use of remote sensing techniques in biophysical analysis and EIA.
Ross, W.A.	FACULTY OF ENVIRONMENTAL DESIGN Member of several federal Environmental Assessment Panels; follow-up studies focussing on environmental management; review of Environmental Assessment Process for FEARO.
Saunders, J.O. (11, 201)	CANADIAN INSTITUTE OF RESOURCES LAW Natural resources law (water law, mining law); environmental law.
Scott-Brown, M.	FACULTY OF ENVIRONMENTAL DESIGN Wildlife monitoring along the Trans-Canada Highway in Banff National Park (km 0-13).
Strosher, M.	KANANASKIS CENTRE Analytical environmental chemistry, multidisciplinary research, development and coordination in air and water systems.
Telang, S.A.	KANANASKIS CENTRE Effects of urban runoff and industrial and sewage treatment outfall on water quality of rivers; source accumulation and fate of organic compounds in freshwater systems.

Visser, S.	KANANASKIS CENTRE Ecology of soil and litter fungi; microbiology of reclaimed minespoils; acidification effects on soil microbial processes.
Wallis, P.M.	KANANASKIS CENTRE Microbial ecology of streams and groundwater; fate of pathogenic microorganisms from sewage; detection and control of waterborne *Giardiasis*.
Yoder, C.G.	CANADIAN INSTITUTE OF RESOURCES LAW Offshore oil and gas legal issues.

PROGRAM ACTIVITIES:

A. 1) *Faculty of Environmental Design*

The Faculty is a graduate school that offers a professionally oriented program for its students. It is involved in wildlife management, regional planning, terrain analysis, parks planning and international reserves, forest ecology, ethology. The Faculty is also developing specific capacities in the application of remote sensing to impact assessment and computerized graphics for use in impact and visual assessment. Students are encouraged to undertake practical research in which they obtain experience from real-world situations.

2) *Kananaskis Centre for Environmental Research*

The Centre is an academic research unit of the University of Calgary with administrative offices and research laboratories on the university campus as well as a field research station in the Rocky Mountains, 80 km west of Calgary. The primary function of this Centre is to carry out research relating to the science and technology of environmental quality. Major research projects carried out by Centre scientists deal with environmental aspects of resource development, primarily in western and northern Canada. These include studies related to the quality of air, land and water. Air quality studies relate primarily to sulphur dioxide, oxides of nitrogen, organic hydrocarbons, and carcinogens. Terrestrial studies emphasize disposal of sewage and industrial waste, reclamation of severely disturbed land, and impacts of acid deposition on terrestrial ecosystems. Aquatic studies are focussed on the biological and chemical quality of Alberta rivers and streams.

The Centre assists in courses offered by the University of Calgary as well as by other universities and also provides service to the community. Core funding for the Centre is from the University of Calgary; research is primarily funded by both provincial and federal governments and by industry.

3) *Arctic Institute of North America*

The Institute is a nonprofit organization affiliated with the University of Calgary. The objectives of the Institute are to initiate, encourage, support, and advance the study of arctic conditions and problems.

The Institute operates two research facilities: the Kluane Lake Research Station and the Devon Island Research Station. In addition, the Institute publishes a quarterly scientific journal *Arctic* and a quarterly newsletter "Information North"; maintains ASTIS — the Arctic Science and Technology Information System, a computerized data base; and sponsors research on various topics by interested academics.

4) *Canadian Institute of Resources Law*

The Institute is a nonprofit organization affiliated with the University of Calgary. The objectives of the Institute are to undertake and promote research, education, and publication on Canadian natural resources law.

Its ongoing research program includes legal issues pertaining to oil and gas activities on federal lands; environmental law issues; and water resources law. The Institute's publications program includes the *Canada Energy Law Service*, a regular loose-leaf service on Canadian energy regulatory agencies, and a quarterly newsletter, *Resources*. The Institute also publishes the results of its research work. Educational activities include seminars on topical issues in resources law and a biennial Banff Conference on Natural Resources Law.

5) *Master's Program in Resources and the Environment*

The Faculty of Graduate Studies offers an M.A. or an M.Sc. degree in Resources and the Environment. Students in this interdisciplinary program may study or specialize in EIA.

B. EIA Core Program or Streaming?

Although there is no particular EIA program, students at both the undergraduate and graduate levels can plan programs with the assistance of faculty members which will allow them to graduate with a degree with a concentration in EIA. In particular, students can organize a program through the Department of Geography, at an undergraduate level, and through the Faculty of Environmental Design or the Resources and the Environment Program at the graduate level.

C. Activities Related to EIA:

1) *Department of Sociology*

The Department organizes colloquia on various subjects relating to sociology.

In 1985, the International Association for Impact Assessment held its conference in Calgary. One of the organizers was Dr. DiSanto of the Department of Sociology. The proceedings of this conference will be published.

2) *Canadian Institute of Resources Law*

From time to time, the Institute offers various workshops and colloquia on subjects relating to EIA.

ACTIVITÉS :

A. 1) *Faculty of Environmental Design*

École pour étudiants diplômés qui offre un programme débouchant sur une profession. On s'occupe de la gestion de la faune, de la planification régionale, de l'analyse du terrain, de la planification des parcs et des réserves internationales, de l'écologie/éthologie des forêts. La faculté développe également des capacités spécifiques à l'application de la technique de la télédétection aux évaluations d'impact et des graphiques informatisés pour représenter les impacts visuels. On y encourage les étudiants à entreprendre des recherches pratiques pour acquérir de l'expérience à partir de situations réelles.

2) *Kananaskis Centre for Environmental Research*

Le centre est un organe de recherche de l'université de Calgary comprenant des bureaux administratifs et des laboratoires de recherche sur le campus et une station de recherche située dans les montagnes Rocheuses à 80 kilomètres à l'ouest de Calgary. Les sciences et techniques de la qualité de l'environnement constituent le principal objet de recherche du centre. Les travaux accomplis par les chercheurs du centre portent sur les aspects environnementaux de la mise en valeur des ressources, principalement dans l'ouest et le nord du Canada. Ils comprennent des études sur la qualité de l'air, des terres et de l'eau. Les études sur la qualité de l'air ont principalement trait au bioxyde de soufre, aux oxydes d'azote, aux hydrocarbures et aux substances carcinogènes. Les études sur les terres sont axées sur l'élimination des eaux d'égout et des déchets industriels, le rétablissement des terres gravement dégradées et les incidences des dépôts acides sur les écosystèmes terrestres. Les études sur l'eau ont surtout trait à la qualité biologique et chimique des rivières et ruisseaux de l'Alberta.

Le centre aide à la prestation de cours par l'université de Calgary et d'autres universités et fournit des services à la collectivité. Son administration est financée par l'université de Calgary et les recherches sont principalement financées par le gouvernement fédéral, la province et l'industrie.

3) *Arctic Institute of North America*

Organisation sans but lucratif affiliée à l'université de Calgary. L'institut a pour objectifs d'amorcer, d'encourager, d'aider et de faire progresser l'étude des conditions arctiques et des problèmes qui s'y rapportent.

L'institut exploite deux stations de recherche : l'une au lac Kluane, et l'autre, dans l'île Devon. En outre, il publie tous les trois mois une revue scientifique intitulée *Arctic* ainsi qu'un bulletin : *Information North*; il exploite la base de données ASTIS (Arctic Science and Technology Information System) et subventionne des travaux de recherche sur différents sujets effectués par des universitaires intéressés par ce domaine.

4) *Canadian Institute of Resources Law*

L'institut est un organisme à buts non lucratifs qui est affilié à l'université de Calgary. Il a pour objectifs de favoriser la recherche, l'éducation et les publications en matière de droit des ressources naturelles au Canada, et d'y participer.

Son programme de recherche suivie porte sur des questions juridiques ayant trait à l'exploration et à l'exploitation pétrolières et gazières sur les terres fédérales ainsi que sur le droit de l'environnement et des ressources en eau. Les publications de l'institut comprennent le *Canada Energy Law Service*, périodique à feuilles mobiles sur les organismes canadiens de réglementation énergétique, et un bulletin trimestriel intitulé *Resources*. De plus, l'institut publie les résultats de ses recherches. Ses activités d'éducation comprennent des colloques sur des questions de droit des ressources et une conférence biennale sur le droit des ressources naturelles tenue à Banff.

5) *Master's Program in Resources and the Environment*

La Faculty of Graduate Studies offre un programme de maîtrise (M.A. ou M.Sc.) en études des ressources et de l'environnement. Les étudiants de ce programme interdisciplinaire peuvent soit étudier soit se spécialiser en évaluation environnementale.

B. Programme spécifique aux évaluations environnementales?

Bien qu'il n'existe pas de programme particulier dans ce domaine, les étudiants non diplômés et diplômés peuvent, avec l'aide des professeurs, organiser des programmes qui leur permettront d'obtenir un diplôme avec concentration en évaluation environnementale. Plus précisément, les étudiants non diplômés peuvent organiser un programme avec les professeurs du

département de géographie, et les étudiants diplômés, avec les professeurs de la Faculty of Environmental Studies ou ceux du programme des ressources et environnement.

C. Activités se rapportant aux évaluations environnementales :

1) *Department of Sociology*

Le département organise des colloques sur divers sujets relatifs à la sociologie.

En 1985, l'International Association for Impact Assessment a tenu sa conférence à Calgary. M. DiSanto, du département de sociologie de l'université de Calgary, était un des organisateurs de cette conférence, dont le compte rendu sera publié.

2) *Canadian Institute of Resources Law*

L'institut organise de temps à autre divers ateliers et colloques sur des sujets qui se rapportent aux évaluations environnementales.

CARLETON UNIVERSITY

Location/Endroit: Ottawa, Ontario

Mailing Address/ Adresse: Carleton University
Colonel By Drive
Ottawa, Ontario
K1S 5B6

Telephone/ Téléphone: (613) 564-7177

TEACHING:

Department of Geography

45.211 (2) GEOMORPHOLOGY AND ENVIRONMENTAL MANAGEMENT

Instructor: T.P. Wilkinson.

45.311 (3) ENVIRONMENTAL MONITORING

Instructors: J.P. Johnson, M.W. Smith.

45.333 (3) LAND USE, REGIONAL DEVELOPMENT AND PLANNING IN CANADA

Instructor: D.M. Anderson.

45.334 (3) RENEWABLE RESOURCE PLANNING IN A LOCAL AREA

Instructor: D.M. Anderson.

45.404 (4) ENVIRONMENTAL IMPACT ASSESSMENT

An examination of the principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view. The broad range of environmental and socio-economic impacts of development projects are illustrated by case studies. Instructor: M.W. Smith.

45.405 (4) PROBLEMS OF ENVIRONMENTAL IMPACT ASSESSMENT

A project-oriented course in which students apply the principles and methods of environmental impact assessment to selected development projects. Instructors: D.M. Anderson, M.W. Smith.

Technology, Society, Environment Program

59.300 (3) INTRODUCTION TO PROBLEMS OF INDUSTRIAL SOCIETY

Instructors: P. Kruus, J. Lukasiewicz

59.401 (4) TECHNOLOGY AND SOCIETY: ASSESSMENT

The course examines the complexities and practices of evaluating the relationship and impact of technology on society and the physical environment. Specific topics include: retrospective assessment of large projects; technological horror stories — cases of incorrect assessments; necessary aspects of an assessment project; examples of Canadian technology assessment. Instructor: J. Lukasiewicz.

Department of Law

51.380 (3) LAW OF ENVIRONMENTAL QUALITY

Instructor: D.R. Good.

INDIVIDUAL RESEARCH AND WORK:

Bayly, I.L. BIOLOGY

Advisor on repair and rehabilitation of Point Pelee marshes, impact of diking on migratory bird sanctuary, impact of water regulation on Great Lakes and St. Lawrence Valley, impact of acid rain on forest seedlings, impact of tourist use of major rivers in Outaouais region.

Fenton, M.B. BIOLOGY

Advisor to World Wildlife Fund and consultant to U.S. Fish and Wildlife Service and New York Department of Environmental Conservation on endangered bat species and impacts on cave habitats.

Good, D.R. LAW

Member of Ontario Bar; member of Ontario Institute of Agrologists; contributing editor on environmental law to the *Ottawa Law Review*, which is

comprised of two parts: general environment and environmental assessment; environmental impact assessment seminar organizer for Corpus Information.

Graham, K. (147, 148, 149, 150) — SCHOOL OF PUBLIC ADMINISTRATION

Evaluation of funding for public participation; oil and gas development in the Beaufort Sea; relationship between development companies, senior levels of government and local governments in central and eastern arctic.

Kruus, P. — CHEMISTRY

Editor of *Controversial Chemicals: A Citizen's Guide*, which describes the historical, scientific, economic and political background of chemicals as they concern the general public.

Lambert, J.D.H. — BIOLOGY

Consultant on impact relief from traditional farming systems in tropics. Consultant on impacts of natural products used as biocides and health controls in developing countries. Consultant to Agriculture Canada on intercropping systems effects on erosion and nitrogen-fixing. Co-chairman of IBP tundra panel on impacts on ecological areas.

Merriam, G. — BIOLOGY

Landscape ecology in farmlands and forest fragments as basis for conservation and land-use planning. Advisor to Air Pollution Control Association on atmospheric pollution and forest die-back.

Peck, S.B. — BIOLOGY

Advisor to IUCN. Consultant, Galapagos National Park, Ecuador, on tourism impact on lava-tube cave faunas. Consultant/advisor to IUCN, U.S. Fish and Wildlife Service, Iowa Natural Area Inventory and U.S. Forest Service on endangered invertebrates.

Smith, M.W. (411, 412) — GEOGRAPHY

Advisor to Beaufort Sea Project Environmental Assessment Panel.

Weatherhead, P.J. — BIOLOGY

Consultant on bird damage to crops. Research for World Wildlife and Parks Canada on endangered black rat snake.

Williams, P. (411, 412) — GEOGRAPHY

Geotechnical advisor to Alaska Highway Pipeline Environmental Assessment Panel; geotechnical advisor and team leader advising Environmental Assessment Panels and other federal government agencies as required, such as the Norman Wells oil pipeline project.

PROGRAM ACTIVITIES:

A. 1) *Technology, Society and Environment Studies*

Students in the courses 59.300 and 59.401 (see above) do multidisciplinary group workshops and projects on topics relative to the interaction of technology, society and the environment.

2) *Department of Geography*

The Department offers opportunities for study and research in many facets of EIA/SIA. It also operates the Geotechnical Science Laboratories, which focus on aspects of northern development such as pipeline construction, and have been involved in providing expertise for environmental assessments.

B. EIA Core Program or Streaming?

Students interested in EIA training are streamed into basic courses in ecology and geography. A joint major program with counsellors from the departments of Biology and Geography streams students around an interdisciplinary core.

C. Activities Related to EIA:

1) Technology, Society, Environment Public Lecture Series includes topics related to EIA.

2) Various seminars and presentations on subjects related to EIA are presented by the Department of Geography.

ACTIVITÉS :

A. 1) *Technology, Society and Environment Studies*

Les étudiants des cours 59.300 et 59.401 cités plus haut font des ateliers et projets multidisciplinaires sur

des sujets se rapportant à l'interaction de la technologie, la société et l'environnement.

2) *Department of Geography*

Il est possible d'y étudier un grand nombre d'aspects de l'évaluation environnementale et sociale et de faire des recherches diversifiées dans ce domaine. Le département assure aussi le fonctionnement des laboratoires de sciences géotechniques où l'on s'intéresse particulièrement à des aspects de la mise en valeur du Nord tels que la construction de pipelines, et on a déjà fait appel à sa compétence pour des évaluations environnementales.

B. Programme spécifique aux évaluations environnementales?

Les étudiants qui désirent recevoir une formation à l'évaluation des- incidences environnementales sont inscrits à un programme interdisciplinaire comprenant des cours d'écologie et de géographie grâce à une collaboration avec les orienteurs des départements de biologie et de géographie.

C. Activités se rapportant aux évaluations environnementales :

1) Série de conférences publiques sur la technologie, la société et l'environnement portant sur des sujets qui se rapportent aux incidences environnementales.

2) Le département de géographie présente divers séminaires et exposés sur des sujets se rapportant aux incidences environnementales.

CONCORDIA UNIVERSITY

Location/Endroit: Montreal, Quebec

Mailing Address/ Adresse: Sir George Williams Campus
1455 de Maisonneuve Blvd. West
Montreal, Quebec
H3G IM8

Telephone/ Téléphone: (514) 848-2424

TEACHING:

Faculty of Engineering

ENRG C495 (3) ENVIRONMENTAL/SOCIAL IMPACT ASSESSMENT

The objective of the course is to provide engineering students with a practical perspective on the concepts, principles and process of EIA and SIA and the engineer's role. The course focusses on Canadian (federal and provincial) projects and programs that have undergone an Environmental Assessment process. Students acquire firsthand knowledge of these case studies from government, engineering consultants, business, industry, nongovernmental groups and academic communities. Active participation of students in discussions, guided research papers, oral presentations and/or role playing in simulated panel hearings is central to the learning process of the course. Instructor: B. Goldsmith.

Department of Geography

GEOG C357 (3) RESOURCE UTILIZATION AND CONSERVATION

Instructor: J.W. Young.

INDIVIDUAL RESEARCH AND WORK:

Goldsmith, B. SOCIAL ASPECTS OF ENGINEERING

Research on case studies dealing with the principles, procedures and applications of EIA/SIA; developing Information Resource Centre on EIA case studies; consultant to public and private sectors.

PROGRAM ACTIVITIES:

A. None indicated.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. Aucunes.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

DALHOUSIE UNIVERSITY

Location/Endroit: Halifax, Nova Scotia

Mailing Address/ Adresse: Dalhousie University
Halifax, Nova Scotia
B3H 3J5

Telephone/ Téléphone: (902) 424-7068

TEACHING:

Institute for Resource and Environmental Studies

ES 5000R (G) INTRODUCTION TO ENVIRONMENTAL STUDIES

The purpose of this course is to provide a broad overview of the field of Environmental Studies and to explore how a variety of disciplines contribute to our understanding of the environment. The first term takes a topical approach, focussing in turn on a series of key aspects of the field. The second term contains two units, one on risk analysis and one on social impact assessment; in both of these the class considers the application of material from the first term to important contemporary environmental issues. Instructors: F. Cohen and staff.

ES 5001B (G) ENVIRONMENTAL ASSESSMENT

The complex nature of environmental impact assessment and decision-making is best examined through case study analysis. Thus lectures serve as a background for the main purpose of the course which is to develop class projects on environmental assessment. These are based on existing experiences and problems of current resource or environmental concern in Canada. Students are expected to meet with government officials, citizen groups and others to assemble the relevant information for a thorough analysis of the problem. This effort is intended to provide students with an exposure to the teamwork required in environmental analysis. Instructors: G. Beanlands and staff.

ES 5004B (G) MANAGEMENT OF TOXIC SUBSTANCES

Managing environmental issues requires a multidisciplinary approach. Toxic substances provide an excellent case study. Lack of knowledge about persistence, toxicity, production, and use patterns, economic impacts and regulations, leaves many uncertainties concerning the degree of risk and contributes enormously to the complexity of the management problem. Government policies and programs at all levels are fragmented but major efforts are underway to rationalize the decision-making process. This course reviews the nature and scope of the problem, toxicological and physical-chemical studies, control technology, economic and legal aspects, perceptions of risks and management approaches. Instructor: R. Côté.

ES 5005A (G) ECOSYSTEMS AND SOCIAL SYSTEMS: A FIELD APPROACH

Instructors: P. Taschereau and F. Cohen.

ES 5020A (G) RESOURCE SYSTEMS AND ECONOMIC DEVELOPMENT

Instructor: A.J. Hanson.

ES 5110A/ EC 5516A (G) NATURAL RESOURCE ECONOMICS

Instructor: M. Cross.

ES 5200B (G) INTRODUCTION TO ENVIRONMENTAL LAW

Topics include the environmental assessment process, including readings on both the federal and provincial environmental assessment processes and the U.S. National Environmental Policy Act. The course will make no attempt to provide a comprehensive survey of the substantial corpus of Canadian environmental law. The rapidity of change would quickly make much of this knowledge obsolete, and such an overview course would be of little value in developing a sophisticated understanding of the relationship between law and the environment. Instead, the aim is to focus on those issues common to essentially all environmental problems, and to

provide an analytical framework that will be generally useful. Instructors: B. Wildsmith and D. VanderZwagg.

INDIVIDUAL RESEARCH AND WORK:

Beanlands, G. (13, 14, 15, 16, 17, 18, 19, 20, 102, 103, 104, 105)	INSTITUTE FOR RESOURCE AND ENVIRONMENTAL STUDIES Environmental assessment methodologies; ecological basis for environmental assessment; ecological content of environmental impact statements.
Brown, A.P.	SCHOOL OF PUBLIC ADMINISTRATION Policy relating to land use.
Coffey, W.J.	SCHOOL OF PUBLIC ADMINISTRATION Local development impacts.
Kasdan, L.	INSTITUTE FOR RESOURCE AND ENVIRONMENTAL STUDIES Monitoring of development activities related to oil and gas exploitation; comparative assessment of Newfoundland and Nova Scotia approaches to social and economic impact studies; impacts of oil and gas development on three isolated communities.
MacDonald, W.S. (169)	HENSON COLLEGE OF PUBLIC AFFAIRS AND CONTINUING EDUCATION Socio-economic impacts of development activities; adaptation to structural change.
Wildsmith, B.	FACULTY OF LAW Environmental law.
Wood, K.S. (169)	HENSON COLLEGE OF PUBLIC AFFAIRS AND CONTINUING EDUCATION Regional impacts of offshore hydrocarbons; definition of core social indicators; managing social impacts from large-scale industrial complexes, using Norway's experience.

PROGRAM ACTIVITIES:

A. 1) *Institute for Resource and Environmental Studies*

The Master of Environmental Studies (M.E.S.) degree program is at the core of the Institute's activities. The program is designed to provide a professional education in fields such as resource ecology and management, environmental policy and administration, and pollution studies. Particular emphasis is given to understanding environment and development relationships in either Canadian or Third World settings.

2) *Dalhousie Ocean Studies Program*

The Ocean Studies Program is an interdisciplinary research program which examines topics relating to ocean resource development. The areas of enquiry relate primarily to ocean law, ocean policy development and management of ocean resources.

3) *Henson College of Public Affairs and Continuing Education*

The aim of the College is to bring university research resources to bear on the economic and social problems of Canada and, in particular, of the Atlantic region. The College takes a multidisciplinary approach to the research it undertakes.

B. EIA Core Program or Streaming?

No; however, a program is offered to train professionally oriented, well-rounded graduates in the field of environmental studies. Students are given the opportunity to specialize in the study and research of EIA/SIA at the graduate level through the various institutes, in particular the Institute for Resource and Environmental Studies.

C. Activities Related to EIA:

1) Seminars, conferences and workshops sponsored by the research institutes on campus on subjects related to EIA/SIA.

2) Detailed student team projects which are undertaken by students at the Institute for Resource and Environmental Studies.

3) Coordinated research and workshop activities in conjunction with other universities located in Halifax.

ACTIVITÉS :

A. 1) *Institute for Resource and Environmental Studies*

Le programme qui débouche sur une maîtrise en études environnementales (M.E.S.) constitue le noyau des activités de l'institut. Le programme est conçu pour fournir une formation dans des domaines tels

que la gestion et l'écologie des ressources, les politiques relatives à l'environnement et l'administration, et la pollution. On met particulièrement l'accent sur la connaissance de l'environnement et ses rapports avec le développement au Canada ou dans le tiers monde.

2) *Dalhousie Ocean Studies Programme*

Programme de recherche interdisciplinaire sur des sujets qui se rapportent à l'exploitation des ressources de la mer. La recherche porte surtout sur le droit de la mer, l'élaboration des politiques relatives à la mer et la gestion des ressources marines.

3) *Henson College of Public Affairs and Continuing Education*

Le collège a pour but l'utilisation des ressources de l'université dans le domaine de la recherche pour étudier les problèmes socio-économiques du Canada en général et de la région de l'Atlantique en particulier. Les travaux de recherche qu'il entreprend ont un caractère multidisciplinaire.

B. Programme spécifique aux évaluations environnementales?

Non; cependant, un programme est offert qui a pour but de former des diplômés en études environnementales qui soient compétents et dont la formation débouche sur une profession. Les différents instituts, en particulier l'Institute for Resource and Environmental Studies permettent aux étudiants diplômés de se spécialiser en évaluation environnementale et sociale et de faire des recherches dans ce domaine.

C. Activités se rapportant aux évaluations environnementales :

1) Séminaires, conférences et ateliers sur des sujets se rapportant aux évaluations environnementales et sociales, organisés à l'université par les instituts de recherche.

2) Projets détaillés entrepris en équipe par les étudiants de l'Institute for Resource and Environmental Studies.

3) Travaux de recherche et d'atelier réalisés conjointement avec d'autres universités qui se trouvent à Halifax.

ÉCOLE POLYTECHNIQUE DE MONTRÉAL

Location/Endroit: Montréal (Québec)

Mailing Address/ Adresse: École Polytechnique
Campus de l'Université de Montréal
Case postale 6079
Succursale 'A'
Montréal (Québec)
H3C 3A7

Telephone/ Téléphone: (514) 340-4711

COURS :

1.528 (4) ENVIRONNEMENT

(niveau baccalauréat)

Hygiène des milieux : conception d'une installation septique, normes. Les déchets solides : décharge contrôlée, compostage, incinération, pyrolyse. La pollution atmosphérique : nature, sources et mesures des polluants, remèdes. Impacts des projets sur l'environnement : concepts, techniques d'évaluation et étude de cas. Pollution par le bruit : mesure, sources, effets du bruit, lutte contre le bruit. Notions écologiques : rupture des écosystèmes et effets des polluants toxiques (métaux lourds, pluies acides). Coordonnateur : C.E. Delisle.

1.6286 (G) IMPACTS DES PROJETS SUR L'ENVIRONNEMENT

(niveau maîtrise)

Principes directeurs et rapport environnemental. Écologie humaine et étude de cas. Évaluation des données écologiques et écologie appliquée aux études d'impact. Aspect économique. Aspect légal. Projet d'aménagement, phases techniques et objectifs des activités relatives à l'environnement. La matrice d'impacts et ses paramètres. Techniques d'identification et d'évaluation des impacts. Techniques Léopold et al., Batelle, Sorensen, Odum, Holmes, McHorg, etc. Modélisation : modèles écologiques, modèles fluviaux. Simulation écologique aquatique. Étude de cas. Coordonnateurs : A.J. Drapeau, C.E. Delisle.

PE.410 (4) ÉCOLOGIE APPLIQUÉE POUR INGÉNIEURS

(niveau baccalauréat)

Coordonnateur : C.E. Delisle.

1.6991 (G) SÉMINAIRES — ENVIRONNEMENT

(niveau maîtrise)

Coordonnateur : C.E. Delisle.

RECHERCHE ET TRAVAUX PERSONNELS :

Delisle, C.E. GÉNIE CIVIL

Étude des répercussions environnementales de l'extension du port de Québec; études des répercussions sur l'environnement de l'ouvrage de contrôle sur la rivière des Mille Iles; études des répercussions environnementales : aménagement portuaire Leslie, Îles-de-la-Madeleine : Étude d'impact sur l'écosystème marin, composition et mouvement des populations de homards.

Drapeau, A.J. Directeur scientifique régional de la publication *Revue française des sciences de l'eau.*

ACTIVITÉS :

A. 1) *Centre d'ingénierie nordique de l'École Polytechnique*

Organisme de recherche pluridisciplinaire et interuniversitaire qui regroupe des ingénieurs oeuvrant dans plusieurs domaines, ainsi que des spécialistes des sciences humaines qui s'intéressent au développement socio-économique du Nord, à l'exploitation rationnelle de richesses naturelles, à la mise en oeuvre de grands ouvrages et à l'établissement physique des agglomérations nordiques, y compris les approvisionnements hydriques et énergétiques.

2) *Section du génie de l'environnement*

Dans ce qui est offert par cette section de l'École, on essaie de donner aux étudiants en génie une expérience pratique des problèmes de génié de l'environnement. Il existe des liens très étroits entre l'École et des organisations professionnelles comme les sociétés d'experts-conseils et d'exploitation qui fournissent aux étudiants l'occasion d'être confrontés à des problèmes réels lors des cours pratiques et des travaux de recherche.

B. Programme spécifique aux évaluations environnementales?

Non. Ce qui est offert a pour but principal de servir d'introduction aux cours professionnels de génie de l'environnement.

C. Activités se rapportant aux évaluations environnementales :

1) En plus de ce qui précède, l'École commandite une série annuelle de séminaires auxquels participent le personnel, les étudiants et les chercheurs du gouvernement et de l'industrie. Les documents sont ensuite réunis, révisés et publiés annuellement sous forme de volume dont les sujets se rapportent à l'évaluation et au génie de l'environnement.

2) Plusieurs membres de l'École participent à la publication d'une revue de recherche intitulée *Revue française des sciences de l'eau*.

PROGRAM ACTIVITIES:

A. 1) *Centre d'ingénierie nordique de l'Ecole Polytechnique*

The centre is a multidisciplinary and interuniversity research agency which includes engineers working in several fields and specialists in the social sciences. The chief areas of work are: socio-economic development in the North, the rational use of natural resources, construction of large-scale projects and the physical establishment of northern communities, including their water and energy supply.

2) *Section du génie de l'environnement*

The program offered by this part of the school attempts to give engineering students "hands-on" experience with regard to environmental engineering problems. A very close relationship exists between the school and professional organizations such as consulting firms and development companies, which allows students the opportunity to grapple with "real-world" problems during practical sections of courses and during research.

B. EIA Core Program or Streaming?

No. The program is designed primarily as an introduction to professional environmental engineering.

C. Activities Related to EIA:

1) Aside from the close ties the school has with the resources community, the school sponsors an annual series of seminars by staff, students, government, and industry researchers. The papers are collated and edited and published in a yearly volume of subjects relating to assessment and environmental engineering.

2) Many members of the school are involved in the publication of a research journal *Revue française des sciences de l'eau*.

UNIVERSITY OF GUELPH

Location/Endroit: Guelph, Ontario

Mailing Address/ Adresse: The University of Guelph
Guelph, Ontario
N1G 2W1

Telephone/ Téléphone: (519) 824-4120

TEACHING:

Department of Geography

45-311 (3) BIOTIC AND NATURAL RESOURCES

Instructor: M. Moss.

45-321 (3) MANAGEMENT OF THE BIOPHYSICAL ENVIRONMENT

Issues in the relationship between man and his biophysical environment. The course aims to develop an understanding of basic concepts and methods in resource management and apply these to contemporary resource and environmental problems. Emphasis is on the economic, social and environmental implications of man's development, use and management of biophysical resources. Instructor: R. Kreutzwiser.

45-411 (4) ENVIRONMENTAL SYSTEMS ANALYSIS

An integrated approach to the evaluation and modelling of environmental systems. This course emphasizes the prediction of environmental impact and its broad geographical implications. The concepts and principles of systems analysis are applied to land, hydrologic and atmospheric systems with a view to enhancing capability to anticipate environmental impacts. Instructor: J. FitzGibbon.

45-604 (G) METHODS OF REGIONAL ANALYSIS

Techniques of regional analysis are necessary for the understanding and assessment of social and environmental problems, and for policy formulation. This course demonstrates the nature and use of several methods of measurement and analysis that have wide application to regional-scale problems. Included are regional multiplier analysis, economic impact analysis, resource assessment methods, and social impacts of public services and facility location. Instructors: B. Smit and A. Joseph.

45-628 (G) RURAL ENVIRONMENTAL RESOURCES

Analysis and management of rural non-agricultural resources. Emphasis is on concepts and techniques for the biophysical and socio-economic analysis of environmental resources. Topics include biophysical land classification, environmental impact assessment and landscape assessment. Instructors: M. Moss and R. Kreutzwiser.

85-400 (4) RESEARCH PROJECT IN ENVIRONMENTAL STUDIES

This is a directed research paper course required of all senior students in the Environmental Studies Minor Program, and provides an opportunity for students to formulate and investigate an issue of current environmental concern. Instructor: R. Kreutzwiser.

Department of Land Resource Science

87-250 (2) PROBLEM SOLVING IN LAND RESOURCE SCIENCE

87-310 (3) RESOURCES PLANNING AND MANAGEMENT

An introductory technique course directed at the application of a systematic approach to problem-solving in the natural resource sector. The course consists of three modules concerned with procedures of ecological land classification, computer-assisted resource analysis and environmental impact assessment. Instructor: R.A. McBride.

87-415 (4) DECISION-MAKING IN RESOURCE MANAGEMENT

School of Rural Planning and Development

950631 (G) ENVIRONMENTAL IMPACT ASSESSMENT

This course deals with the role of environmental impact assessments and statements in the planning, development, and operation of resource projects. Topics discussed include the philosophical and institutional basis for environmental impact assessments, and the effects of such assessments on resource development projects. Instructor: J. FitzGibbon.

School of Agricultural Economics

02-270 (2) Survey of Natural Resource Economics

02-370 (3) Economics of Outdoor Recreation

02-431 (4) Resource Economics

Department of Economics

36-493 (4) Environmental Economics

School of Engineering

05-355 (3) Water Management

05-380 (3) Sound — Its Measurement and Control

Department of Toxicology

94-336 (3) Environmental Chemistry and Toxicology

Department of Zoology

92-405 (4) Natural Resources Policy

INDIVIDUAL RESEARCH AND WORK:

Davidson -Arnott, R. GEOGRAPHY

Geomorphic processes and impact assessment; shoreline modification.

Dickenson, T. SCHOOL OF ENGINEERING

Environmental impacts of land use, soil erosion and land management.

Douglas, D. SCHOOL OF RURAL PLANNING AND DEVELOPMENT

Social and economic impact assessment; organizational environments.

FitzGibbon, J.E. (128, 129, 274) SCHOOL OF RURAL PLANNING AND DEVELOPMENT

Evaluation of man's impact on the biophysical and socio-economic environment of rural areas including land, water and forest resources; rural land conversion; service provision; and technological change.

Forester, B. ECONOMICS

Resource economics.

Hilts, S. (171) SCHOOL OF RURAL PLANNING AND DEVELOPMENT

Environmental impact analysis; performance of environmental assessments.

Joseph, A. GEOGRAPHY

Social impacts of public services and facility location.

Kreutzwiser, R. GEOGRAPHY

Environmental policy evaluation; resource evaluation; impact of outdoor recreation.

Lavigne, D. ZOOLOGY

Impacts on terrestrial wildlife, arctic environments.

McBride, R.A. LAND RESOURCE SCIENCE

Interpretive and predictive modelling as a means of assessing the impact of both agricultural and nonagricultural land uses on the soil resource.

Moss, M. GEOGRAPHY

Process approach to biophysical land classification; biotic resource evaluation and development impact.

Nickling, W. GEOGRAPHY

Geomorphic processes and impact assessment; soil erosion.

Nudds, T. ZOOLOGY

Environmental impacts. Waterfowl and wildlife management.

Reid, D.	SCHOOL OF RURAL PLANNING AND DEVELOPMENT Social and economic impact assessment.
Rodd, S.	SCHOOL OF AGRICULTURAL ECONOMICS Hazardous waste disposal; environmental policy.
Ronald, K.	ZOOLOGY Environmental impacts on arctic marine mammals.
Smit, B.E.	GEOGRAPHY Land evaluation and rural land-use planning; impacts of urban growth; community services development.
Sprague, J.	ZOOLOGY Environmental impacts on marine environments; heavy metals in marine environments.
Thomas, V.	ZOOLOGY Impact on arctic ecosystems.
Whitely, H.	SCHOOL OF ENGINEERING Environmental impacts of land drainage.
Wolfe, J.S. (375)	GEOGRAPHY Community involvement in land-use planning for rural areas; public participation.

PROGRAM ACTIVITIES:

A. 1. *Environmental Studies Minor Honours Program*

This is an interdisciplinary option in the B.A. program designed to provide students with an opportunity to develop an understanding of the human and biophysical roots of environmental problems. The program consists of a minimum of 10 semester courses, with a required core of 5 biological (ecology) and social science courses, and a minimum of 5 elective courses in botany, zoology, land resource science, economics, geography, sociology, political studies and landscape architecture. A number of courses in the program deal, in part, with EIA and SIA or provide a basis for impact assessment. The Program is administered by the Department of Geography.

2. *School of Rural Planning and Development and Department of Geography*

The Land Evaluation Group aims to develop and apply procedures for assessing land for alternative uses. Much of the Group's activity has been devoted to developing and applying a computer-based land evaluation model to issues such as the impact of urban expansion on future needs for agricultural land and the effects of alternative erosion control policies on agricultural production.

3. *Department of Geography*

Much of the research in the Department of Geography focusses on the assessment of environmental and social impact in rural areas.

B. EIA Core Program or Streaming?

This may be carried out through the interdisciplinary resource development program involving geography, landscape architecture, agricultural economics, and land resource science as well as other departments.

C. Activities Related to EIA:

Both the Department of Geography and the School of Rural Planning and Development have been involved in several studies looking at environmental and social impact of government policy in the areas of land use control, land development and natural resources.

ACTIVITÉS :

A. 1. *Environmental Studies Minor Honours Program*

Études interdisciplinaires au niveau du B.A. qui permettent aux étudiants de mieux connaître les causes humaines et biophysiques des problèmes environnementaux. Elles consistent en un minimum de 10 cours par semestre, dont cinq cours obligatoires en biologie (écologie) et en sciences sociales et un minimum de cinq cours optionnels en botanique, en zoologie, en sciences de la terre, en économie, en géographie, en sociologie, en politique et en architecture paysagiste. Un certain nombre de cours portent, en partie, sur l'évaluation environnementale et sociale ou servent de préparation à l'évaluation des incidences. C'est le département de géographie qui est responsable de ce programme.

2. *School of Rural Planning and Development and Department of Geography*

Le Land Evaluation Group s'efforce de développer et d'appliquer des procédures pour évaluer les terres pour usages alternatifs. Les activités du groupe ont été consacrées au développement et à l'application d'un modèle informatisé d'évaluation des terres aux questions de l'impact de l'expansion urbaine sur les besoins futurs des terres agricoles et les effets des politiques du contrôle alternatif de l'érosion sur la production agricole.

3. *Department of Geography*

La plupart des travaux de recherche portent sur l'évaluation des impact environnementaux et sociaux dans les régions rurales.

B. Programme spécifique aux évaluations environnementales?

Le programme interdisciplinaire en développement des ressources comprenant la géographie, l'architecture paysagiste, l'économie agricole, la science de l'utilisation des terres, ainsi que d'autres départements se rapporte spécifiquement aux évaluations environnementales.

C. Activités se rapportant aux évaluations environnementales :

Le département de geographie et le School of Rural Planning and Development ont été impliqués dans plusieurs études concernant les impacts environnementaux et sociaux de la politique gouvernementale dans le domaine du contrôle de l'utilisation et du développement des terres et des ressources naturelles.

HOLLAND COLLEGE

Location/Endroit:	Summerside, Prince Edward Island
Mailing Address/ Adresse:	Holland College Harbourside Centre Water Street Summerside, P.E.I. C1N 1A9
Telephone/ Téléphone:	(902) 436-7261

TEACHING:

Holland College uses the "STEP" system (Self Training and Evaluation Process), whereby learning, not teaching, is emphasized. The Environmental Technology Program is based upon a profile chart which has been developed by an advisory committee selected from the environmental profession. The profile consists of a series of "General Areas of Competence" (GAC), labelled "A" through "J". Within each of these areas is a series of skills which are performed until an adequate level of competence is achieved over the two year course.

GAC

A	IDENTIFY AND REACT TO ENVIRONMENTAL PROBLEMS
B	MONITOR OPERATION OF INSTALLED ENVIRONMENTAL CONTROL EQUIPMENT
C	IDENTIFY AND REACT TO OCCUPATIONAL HAZARDS
D	SET UP, OPERATE AND MAINTAIN INSTRUMENTS AND EQUIPMENT
E	COLLECT AND RECORD FIELD DATA
F	PERFORM LABORATORY PROCEDURES
G	UTILIZE MAPS, PHOTOS AND BLUEPRINTS
H, I AND J	COMPILE AND ANALYZE DATA, COMMUNICATE EFFECTIVELY, DEVELOP PERSONAL COMPETENCES.

INDIVIDUAL RESEARCH AND WORK:

None indicated.

PROGRAM ACTIVITIES:

A. *School of Technology*

The Environmental Technology Program emphasizes individualized and group projects. These projects are selected by the students within the framework of the profile chart. A number of these projects are based upon environmental assessment and environmental impact assessment.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA:

The Environmental Technology Program is commencing a major environmental impact assessment on the West River in Prince Edward Island. This will involve a baseline survey of existing variables, study of the effects of construction of another channel within the causeway, and a continual monitoring/follow-up survey.

ACTIVITÉS :

A. *School of Technology*

Le programme sur les techniques environnementales comprend des travaux individuels et collectifs que les étudiants choisissent selon les profils. Bon nombre de ces travaux sont fondés sur l'évaluation environnementale et l'évaluation des incidences environnementales.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales :

Dans le cadre du programme sur les techniques environnementales, on entreprend une importante évaluation des incidences environnementales sur la rivière West, située dans l'Île-du-Prince-Édouard. Elle comprendra un relevé des conditions de base des variables existantes, une étude des effets de l'aménagement d'un autre chenal dans la digue et un contrôle suivi subséquent.

LAKEHEAD UNIVERSITY

Location/Endroit: Thunder Bay, Ontario

Mailing Address/ Adresse: Lakehead University
Thunder Bay, Ontario
P7B 5E1

Telephone/ Téléphone: (807) 345-2121

TEACHING:

Department of Geography

GEOG 3311 (3) ENVIRONMENTAL GEOMORPHOLOGY

GEOG 3331 (3) ENVIRONMENTAL CLIMATOLOGY

GEOG 3411 (3) RESOURCE GEOGRAPHY

GEOG 3431 (3) THE GEOGRAPHY OF ENERGY

Note: Both GEOG 3411 and GEOG 3431 contain elements dealing with the assessment of the environmental impact of energy and mineral resource development.

School of Engineering

ENG 0530 (4) ENERGY CONVERSION AND ENVIRONMENTAL EFFECTS

Instructor: R.G. Rosehart.

ENG 0136 (4) ENVIRONMENTAL CONTROL

Instructor: R.G. Rosehart.

Note: EIA is addressed in each of the two above engineering courses. Aside from consideration of process and methodology, emphasis is placed on the social and environmental responsibility of an engineer.

INDIVIDUAL RESEARCH AND WORK:

Oosterveld, M. ENGINEERING

Consultation on water contamination; impact of port expansion on nearby marshes; impact of urbanization and land management practices on storm runoff and minimum impact design.

Phillips, B.A.M. GEOGRAPHY

The morphological impact of the Neebing-McIntyre Flood Control Project in Thunder Bay; effects of urbanization on fluvial processes.

Rasid, H. GEOGRAPHY

Morphologic effect of channelization of the Neebing-McIntyre floodway, Thunder Bay, Ontario; environmental features of the Neebing-McIntyre floodway; erodability of floodway channels: the Assiniboine Diversion, Southern Manitoba.

Rosehart, R.G. ENGINEERING

Consultations on EIAs, as well as participation in public consultation processes associated with EIAs.

PROGRAM ACTIVITIES:

A. None indicated.

B. EIA Core Program or Streaming? None indicated.

C. Activities related to EIA: None indicated.

ACTIVITÉS :

A. Aucunes.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

LAURENTIAN UNIVERSITY

Location/Endroit: Sudbury, Ontario

Mailing Address/ Adresse: Laurentian University
Ramsey Lake Road
Sudbury, Ontario
P3E 2C6

Telephone/ Téléphone: (705) 675-1151

TEACHING:

Department of Geography

GEOG 4106E (4) APPLIED GEOMORPHOLOGY

Instructor: J.R. Pitblado.

GEOG 4107E (4) LAND RESOURCES AND THEIR EVALUATION

Instructor: J.R. Pitblado.

INDIVIDUAL RESEARCH AND WORK:

None indicated.

PROGRAM ACTIVITIES:

A. None indicated.

B. EIA Core Program or Streaming? None indicated.

C. Activities related to EIA: None indicated.

ACTIVITÉS :

A. Aucunes.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

UNIVERSITÉ LAVAL

Location/Endroit: Québec (Québec)

Mailing Address/ Adresse: Université Laval
Cité universitaire
Québec (Québec)
G1K 7P4

Telephone/ Téléphone: (418) 656-2131

COURS :

Département de génie civil

GCI-62994 (2) IMPACTS DES PROJETS SUR L'ENVIRONNEMENT

Cadre législatif des études d'impact au Canada et au Québec. Initiation aux techniques d'évaluation des répercussions environnementales. Revue des principes et méthodes de l'écologie appliquée à l'évaluation des impacts. Études de cas types sur de projets en cours. Coordonnateur : J.B. Sérodes.

Aménagement du territoire et développement régional

AME 62738 (G) SOCIOLOGIE DE L'AMÉNAGEMENT

Coordonnateur : L. Guay.

AME-62828 (2) AMÉNAGEMENT ET ENVIRONNEMENT

Les problèmes de l'environnement physique et humain étudiés dans le contexte de l'aménagement du territoire et du développement régional. Dégradations de l'environnement et étude systématique des pollutions. Développement économique et conservation. Processus de la planification. Contraintes et blocages. Exemples québécois, canadiens, européens et africains. Coordonnateur : M. Maldague.

AME-62832 (2) GESTION DE L'ENVIRONNEMENT TROPICAL

Coordonnateur : M. Maldague.

AME-63141 (3) LES BASES BIOPHYSIQUES DE L'AMÉNAGEMENT DU TERRITOIRE

Coordonnateur : P. Clibbon.

Département de géographie

GGR-10605 UTILISATION DU SOL

GGR-60441 (G) ÉCOLOGIE ET AMÉNAGEMENT DU TERRITOIRE

Département de sociologie

SOC 14946 ENVIRONNEMENT ET SOCIÉTÉ

Coordonnateur : L. Guay.

Département des sciences forestières

FOR-15478 (3) AMÉNAGEMENT DES BOISÉS URBAINS

L'étudiant est invité à étudier le problème des boisés urbains et périurbains sous l'aspect de la connaissance du milieu, de la planification, de l'organisation et de l'exécution. Définitions des boisés urbains et périurbains et leur importance selon différentes fonctions. Le choix des sites. Le choix des espèces. Les traitements sylvicoles et sanitaires. Évaluation environnementale des projets dans les boisés urbains et périurbains. Coordonnateur : M. Pineau.

FOR-16599 (2) ÉCOLOGIE FORESTIÈRE APPLIQUÉE

Intégration de l'information écologique dans la prise de décision en aménagement forestier, en sylviculture et en opération forestière. Classification taxonomique et cartographique des sites forestiers et des stations forestières. Évaluation des aptitudes et contraintes des terres. Évaluation environnementale des projets forestiers. Coordonnateur : L. Bélanger.

FOR-17242 (3) AMÉNAGEMENT DU TERRITOIRE

Concepts fondamentaux de l'aménagement du territoire forestier : développement, patrimoine foncier,

allocation des terres, propriété foncière, éthique sociale de la terre, qualité de vie. Processus de gestion des terres : évaluation des fonctions des terres forestières, affectation des terres et détermination des modalités d'utilisation. Utilisations polyvalentes, prioritaires et exclusives. Évaluation environnementale des plans d'aménagement. La structure géographique du territoire forestier québécois. Coordonnateurs : L. Bélanger et M. Pineau.

RECHERCHE ET TRAVAUX PERSONNELS :

Bélanger, L.
Pineau, M.

SCIENCES FORESTIÈRES

Intégration de l'information écologique dans la gestion des terres et l'aménagement forestier des régions habitées.

Guay, L.
(163, 164)

SOCIOLOGIE

L'écologisme du paradigme aux valeurs; représentation et aménagement.

Guay, L.
Corrivault, C.

SOCIOLOGIE

La forêt comme enjeu social.

Guertin, P.S.
(165)

ÉCOLE D'ARCHITECTURE ET CENTRE DE RECHERCHES EN AMÉNAGEMENT ET EN DÉVELOPPEMENT

Recherche sur le processus écologique de la transformation urbaine et sur l'impact de cette transformation sur la nouvelle répartition des fonctions ainsi que sur le paysage urbain. Vice-président du Conseil consultatif de l'environnement; collabore à plusieurs études d'impacts.

Maldague, M.

CENTRE DE RECHERCHES EN AMÉNAGEMENT ET EN DÉVELOPPEMENT

Impacts de l'utilisation du bois de chauffage en milieu tropical rural.

Migneron, J.G.
(226, 227)

CENTRE DE RECHERCHES EN AMÉNAGEMENT ET EN DÉVELOPPEMENT

Impact du bruit des autoroutes et des grands projets de développement.

Étude de la sédimentation intertidale de l'estuaire moyen du Saint-Laurent; acquisition de données de base sur les processus sédimentaires et le pouvoir de transformation des polluants et des nutriments par les zones intertidales; expertise dans l'étude des impacts bio-physiques concernant l'extension du Port de Québec et divers projets de dragage; méthodologie d'étude des impacts physiques sur les estuaires des rivières nordiques du Québec à la suite de leur aménagement hydro-électrique.

Sérodes, J.-B.
(302, 303, 304)

GÉNIE CIVIL

Villeneuve, P.
DeKoninck, R.

GÉOGRAPHIE

«Ecoville» : genres de vie, énergie et organisation spatiale dans la région urbaine de Québec. Les objectifs sont : (1) Reproblématiser la notion de genres de vie de façon à la rendre opératoire pour l'étude du milieu urbain des sociétés industrielles avancées. (2) Interpréter les quartiers de la région urbaine de Québec en tant qu'écosystèmes, c'est-à-dire comme combinaisons spécifiques de genres de vie et de potentiels bio-physiques. (3) Construire un simulateur spatial sur ordinateur permettant d'évaluer l'impact des projets et des scénarios d'aménagement prévus dans la région urbaine de Québec. (4) Publier une série de plaquettes informant les citoyens de la région sur les rapports existant entre les genres de vie et le milieu bio-physique.

ACTIVITÉS :

A. 1) *Département de génie civil*

Le programme a comme sujet principal les conséquences des projets sur l'environnement. Il a pour but de faire connaître aux étudiants en génie les aspects dont il faut tenir compte lors de la conception et de la réalisation des projets pour que ces derniers ne comportent pas de risques.

2) *Département de géographie*

Les membres du département abordent la question de l'évaluation environnementale du point de vue de la mesure des divers facteurs qui doivent être pris en considération pour que les projets importants soient mis en oeuvre en respectant le plus possible l'environnement. «Éco-développement» et «intervention écologique» sont des notions très importantes employées pour l'étude de l'exploitation.

3) *L'aménagement des territoires et le développement régional*

L'évaluation des incidences environnementales et sociales dans l'aménagement des terres et le développement régional est étudiée dans le contexte de la planification écologique. Les étudiants se familiarisent avec les différentes façons de mesurer les ressources biophysiques ainsi qu'avec les conflits d'utilisation inhérents à la mise en valeur de ces ressources.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

PROGRAM ACTIVITIES:

A. 1) *Département de génie civil*

The effect of projects on the environment is the major area of study related to EIA. The program is designed to give engineering students an understanding of the considerations that must be taken into account in the design and operation of projects to minimize risk.

2) *Département de géographie*

The approach taken by members of the Department to EIA is in terms of the measurement of the various factors which must be taken into account for the most ecologically sound development of major projects. The concepts of "eco-development" and "ecological intervention" play a significant role in the way in which development is studied.

3) *L'aménagement des territoires et le développement régional*

EIA is examined in the context of environmental planning. Students are exposed to various ways of measuring biophysical resources, and the use conflicts inherent in their development.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

McGILL UNIVERSITY

Location/Endroit:	Montreal, Quebec
Mailing Address/ Adresse:	McGill University 845 Sherbrooke Street West Montreal, Quebec H3A 2T5
Telephone/ Téléphone:	(514) 392-4311 MacDonald College: (514) 457-2000

TEACHING:

Department of Anthropology

150-446B (4) APPLYING ANTHROPOLOGY: THE DIALECTIC OF THEORY AND DATA

Students read the work of applied anthropologists (including social impact studies) to see how applied methodology differs from theoretical research. They conduct, under supervision, one study evaluating the effectiveness or impact of a local development. Instructor: R.F. Salisbury.

151-634D (G) ANTHROPOLOGY OF DEVELOPMENT

Graduate Seminar. Discussion of theories of development, and of how major social change impacts local populations in Canada and in the Third World. Instructor: D.R. Aronson.

School of Urban Planning

409-603D (G) PLANNING PROJECTS I (STUDIO)

Instructors: J. Wolfe, D.F. Farley and staff.

409-604A (G) PLANNING PROJECTS II

Instructors: D. Brown and staff.

409-610/611 (G) MAN AND ENVIRONMENT I AND II

Instructors: Staff and visitors.

409-614B (G) URBAN ENVIRONMENTAL PLANNING

Examination and evaluation of methodologies pertaining to the assessment of environmental impact in the urban context and the integration of diverse environmental elements directly within the urban planning process. Consideration is given to both theoretical and practical issues. The quality of recent professional reports is assessed. Instructor: D. Brown.

Department of Geography

183-503B (G) ENVIRONMENTAL IMPACT EVALUATION

Theory and methods. A study of the development and application of environmental impact evaluation, noting the theoretical basis and practical shortcomings of various methodologies. Emphasis on the means of accurately assessing impacts on physical systems and evaluating the significance of those impacts in terms of human usage of the affected systems. Instructor: T. Meredith.

Centre for Northern Studies and Research

197-604A (G) NORTHERN ECOLOGY AND RENEWABLE RESOURCES

Structure and function of northern ecosystems; plant and animal distributions, seasonality, migrations; fish and fisheries — present and potential exploitation; marine and terrestrial mammals — game management and the fur industry; principles and practice of environmental impact assessment case studies.

Institute of Oceanography

177-542D (3) BIOLOGICAL OCEANOGRAPHY

Department of Renewable Resources, Macdonald College

375-325B (3) PRINCIPLES OF LAND PLANNING

375-437B (4) ASSESSING ENVIRONMENTAL IMPACT

The theories and procedures of various methods of assessing environmental impact. An evaluation of previously published environmental impact assessments to determine the accuracy with which they were able to predict environmental consequences. Instructor: F. Whoriskey.

Department of Agricultural Economics, Macdonald College

334-333A (3) RESOURCE ECONOMICS

Instructor: L.B.B. Baker.

INDIVIDUAL RESEARCH AND WORK:

Aronson, D. ANTHROPOLOGY

Impact of Seyhan irrigation scheme on villages and incomes, southern Turkey; social impacts of agricultural development, Burkina Fâso and Malawi, for World Bank; social impact of agricultural development, Somalia, for USAID and World Bank; impact of development plans on pastoral nomadic societies.

Bider, R. RENEWABLE RESOURCES

Ecological studies on populations of northern animals. Rock ptarmigan habitat selection and mating strategies. Northern ecology and management.

Meredith, T. GEOGRAPHY

Assessment of the requirements for cross-cultural EIA.

Salisbury, R.F (296) PROGRAM IN THE ANTHROPOLOGY OF DEVELOPMENT

Impact of Development of Ross River, Yukon — report used in community consultation; SIA in mining engineering developments; *Decentralizing Development*, a review of ten years of experience with the effects of the James Bay project, and its reviewing processes; the social impact of the Nottaway-Broadback-Rupert hydro development in northern Quebec for SEBJ; SIA of Laluai River Hydroelectric Project, Bougainville, Papua New Guinea.

Whoriskey, F. RENEWABLE RESOURCES

Ecological studies of temperate and northern fishes. Environmental effects on fish production and life history tactics.

PROGRAM ACTIVITIES:

A. 1) *School of Urban Planning*

The objective of the School is to produce qualified professional urban planners for the public and the private sectors. The School's activities address such topics as: control of the use of land, design of the urban environment including transportation and communication networks, protection and enhancement of the natural environment, and the political decision-making process.

2) *Minor Program in Environmental Studies*

The philosophy behind the minor is that students with specific training in a "home" department can form the necessary links with other disciplines through the minor program in the study of various aspects of environmental problems.

3) *Centre for Northern Studies and Research*

The Centre was established to encourage and to co-ordinate the planning of research at McGill University into socio-economic and environmental problems of the North. Apart from its facilities on McGill campus proper, the Centre operates a subarctic research station at Shefferville, and an Arctic field station on Axel Herberg Island, N.W.T.

4) *Macdonald College*

The Faculty of Agriculture is centred at Macdonald College in Ste. Anne de Bellevue. In particular, members of the Department of Renewable Resources are involved in the teaching and research of subjects related to SIA. Also located on campus is the Brace Research Institute for Appropriate Technology.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA:

1) The Program in the Anthropology of Development co-ordinates research studies and contracts by staff and students in development, particularly in the Canadian North. Most studies evaluate past projects. On the basis of them a smaller number of prospective studies are undertaken.

2) Professional development seminars are organized by the Department of Mining Engineering which often address subjects that relate to SIA.

3) The Centre for Northern Studies and Research organizes seminars on topics related to the effects of northern development on northern society.

ACTIVITÉS :

A. 1) *School of Urban Planning*

L'école a pour objectif de former des planificateurs urbains professionnels et qualifiés pour les secteurs publics et privés. On y enseigne des sujets tels que le contrôle de l'utilisation des terres, la conception de l'environnement urbain, y compris les réseaux de transport et de communications, la protection et la mise en valeur de l'environnement naturel, et le processus décisionnel politique.

2) *Minor Programme in Environmental Studies*

L'idée maîtresse de ce programme est que les étudiants qui y participent, tout en acquérant une formation spécialisée dans un département, puissent établir les rapports nécessaires avec d'autres disciplines au cours de l'étude des différents aspects des problèmes environnementaux.

3) *Centre for Northern Studies and Research*

Le centre a été créé pour encourager et coordonner, à l'université McGill, la planification de la recherche relative aux problèmes socio-économiques et environnementaux du Nord. En plus de posséder des installations sur le campus même de l'université McGill, le centre exploite une station de recherche subarctique à Shefferville ainsi qu'une station régionale arctique sur l'île Axel Herberg, dans les Territoires du Nord-Ouest.

4) *Macdonald College*

La faculté d'agriculture se trouve au collège Macdonald, à Sainte-Anne-de-Bellevue. En particulier, les membres du Department of Renewable Resources s'occupent d'enseignement et de recherche sur des sujets se rapportant à l'évaluation des incidences sociales. Le Brace Research Institute for Appropriate Technology se trouve aussi sur le campus du collège.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales :

1) Le programme dans le cadre le l'anthropologie du développement coordonne les études de recherche et les contrats par le personnel et les étudiants dans le domaine du développement, particulièrement dans le nord canadien. La plupart des études évaluent des projets complétés. En se basant sur ces études, un petit nombre d'études éventuelles sont entreprises.

2) Le département de génie minier organise des séminaires de perfectionnement professionnel qui portent souvent sur des aspects de l'évaluation des incidences sociales.

3) Le Centre for Northern Studies and Research organise des séminaires sur des sujets qui se rapportent aux répercussions de la mise en valeur du Nord sur les habitants du Nord.

McMASTER UNIVERSITY

Location/Endroit: Hamilton, Ontario

Mailing Address/ Adresse: McMaster University
Hamilton, Ontario
L8S 4L8

Telephone/ Téléphone: (416) 525-9140

TEACHING:

Department of Geography

GEOG 413 (4) ENERGY AND ENVIRONMENTAL MODELLING

Analytical approaches to regional energy and environmental problems with a review of models and their application. Instructor: S.C. Lonergan.

GEOG 722 (G) TOPICS IN ENERGY AND ENVIRONMENTAL SYSTEMS

Models of energy and environmental systems with particular application to the social sciences, including simulation/optimization, linkages, strategic models and world energy models. Instructor: S.C. Lonergan.

Canadian Studies Program

CDN ST 2B3 (2) NATIVE PEOPLES AND NORTHERN SETTLEMENTS

A study of the history of northern peoples and recent changes in their economic, political, social and cultural relations with the rest of Canada. EIA/SIA component approximately 18 hours. Instructors: R. Preston, P. George.

Note: See TASO Program below under "Program Activities."

Department of Anthropology

ANTHROP 3F3 (3) CONTEMPORARY NORTHERN PEOPLES

A survey of the impacts of northern economic development projects and of state policies and programs on native peoples, and of native responses, including aboriginal rights claims, self-governance, political reorganization of the North, and specific programs. EIA/SIA comprises approximately 15 hours. Instructor: H. Feit.

INDIVIDUAL RESEARCH AND WORK:

Drake, J.J. — GEOGRAPHY

Environmental impacts of mining in subarctic areas; urban stormwater impacts.

Feit, H.A. (123, 124, 125) — ANTHROPOLOGY

Various projects monitoring and analyzing the socioeconomic impacts of James Bay hydroelectric development, and of the implementation of the James Bay and Northern Quebec Agreement on Cree Indians of Quebec.

Ford, D.C. — GEOGRAPHY

Karst landforms and caves; karst groundwater hydrology and hydrogeology throughout Canada; uranium in groundwaters; radwaste disposal.

George, P.J. (244, 245) — ECONOMICS/TASO

Technology assessment in subarctic Ontario; economic impact.

Hall, F.L. — GEOGRAPHY/CIVIL ENGINEERING

Effects of road traffic, aircraft and rail line noise on residential environments.

Hall, R.H. — BIOCHEMISTRY

Using Kitchener-Waterloo as an example, developed a study model to demonstrate the causes and effects of pollution and other adverse environmental impacts within an urban setting, and then to show how they can be minimized.

Kershaw, K.A. — BIOLOGY/TASO

Technology assessment in subarctic Ontario.

Lonergan, S.C.	GEOGRAPHY Assessing the regional impact of large-scale energy systems; modelling the economic, environmental and social impacts of energy investment policies.
MacDonald, G.M.	GEOGRAPHY Dendrochronological approaches for constructing past aerosol pollution patterns; climatic change in the boreal forest.
Muller, R.A. (244, 245)	ECONOMICS/TASO Technology assessment in subarctic Ontario; economic impacts.
Preston, R.J. (277)	ANTHROPOLOGY/TASO Social impact assessment in subarctic Ontario.
Rouse, W.R.	GEOGRAPHY/TASO Technological assessment in subarctic Ontario.
Schwarcz, H.P.	GEOGRAPHY Uranium in groundwaters; radwaste disposal; karst systems.
Sheng, G. (309, 310, 311, 312, 313)	FACULTY OF ENGINEERING Occupational hazards of tritium in the Canadian fusion program; technical, social and ethical aspects of high-level nuclear waste disposal; role of assessment and standards in evaluation of Canadian Nuclear Fuel Waste Management Program.
Shemilt, L.W. (309, 310, 311, 313)	FACULTY OF ENGINEERING Canadian Nuclear Fuel Waste Management Program, Technical Advisory Committee (advises on technical matters and reviews environmental assessment work underway).
Taylor, S.M.	GEOGRAPHY Environmental assessment of proposed Vancouver International Airport expansion.
Woo, M.K. (414)	GEOGRAPHY/TASO Modelling the effects of uranium mining tailings upon the permafrost environment of Keewatin; hydrological impacts of developing northern Ontario (TASO).

PROGRAM ACTIVITIES:

A. *Technology Assessment in Subarctic Ontario (TASO)*

TASO is a multidisciplinary research program whose objective is to study potential environmental and social impacts of energy-resource development projects in subarctic Ontario. The principal investigators consist of professors from the departments of geography, economics, anthropology and biology. Students are involved as researchers, doing work towards masters and doctorate degrees in each of these disciplines. TASO maintains a research station in the Moosonee region. It also publishes research reports on its findings. The initial focus is on the potential impacts of a proposed hydroelectric development on the Moose River's drainage, and on the people who live in the region.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA:

Faculty of Engineering — Review of the Canadian Nuclear Fuel Waste Management Program (CNFWMP). The Canadian Nuclear Fuel Waste Management Program, coordinated by Atomic Energy of Canada Limited, is being reviewed on a continuing basis by an independent Technical Advisory Committee (TAC) whose 13 members were nominated by major scientific/engineering societies in Canada. Besides offering advice on technical matters, it also reviews the environmental assessment work being done, which is a critical part of the program. TAC publishes an annual report which is available upon request. Chair: L.W. Shemilt (Department of Chemical Engineering).

ACTIVITÉS :

A. *Technology Assessment in Subarctic Ontario (TASO)*

TASO est un programme de recherche multidisciplinaire qui a pour but d'étudier les impacts environnementaux et sociaux, à l'étape de la conception des projets dans la partie presque arctique de l'Ontario. Les principaux investigateurs sont professeurs aux départements de géographie, d'économie, d'anthropologie et de biologie. Les étudiants y travaillent en tant que recherchistes, effectuant des travaux qui les conduiront à une maîtrise ou à un doctorat dans chacune de ces disciplines. TASO possède une station de recherche dans la région de Moosonee et publie des rapports de recherche relatifs à

ses découvertes. On se concentre surtout sur les impacts possibles d'un projet de développement hydro-électrique sur le drainage de la rivière Moose, ainsi que sur les gens qui habitent la région.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales :

Faculté de génie — revue du programme canadien de gestion des déchets nucléaires. Le programme, coordonné par l'Énergie Atomique du Canada, est revu continuellement par un comité consultatif technique dont les 13 membres ont été nommés par des sociétés scientifiques et de génie importantes du Canada. En plus d'offrir des conseils sur les sujets techniques, une partie importante du programme consiste à revoir les travaux courants en évaluations environnementales. Le comité publie également un rapport annuel qui est disponible sur demande. Président : L.W. Shemilt (département de génie chimique).

THE UNIVERSITY OF MANITOBA

Location/Endroit:	Winnipeg, Manitoba
Mailing Address/ Adresse:	The University of Manitoba Winnipeg, Manitoba R3T 2N2
Telephone/ Téléphone:	(204) 474-8880

TEACHING:

Department of Zoology

22.471 (2) WILDLIFE MANAGEMENT

Instructor: R. Riewe.

22.741 (G) BIOLOGICAL RESOURCE MANAGEMENT

Instructor: R. Riewe.

Faculty of Law

45.360 (3) ENVIRONMENTAL LAW

Instructor: B. Bass.

Natural Resources Institute

56.708 (G) ENVIRONMENTAL IMPACT ASSESSMENT: PRINCIPLES AND APPLICATIONS

Instructor: W. Everett.

56.710 (G) RESEARCH METHODS

Instructor: T. Henley.

81.228 (G) ENVIRONMENTAL ECONOMICS

Instructor: J. Grey.

81.710 (G) SEMINAR IN ENVIRONMENTAL EDUCATION

Instructor: H. Williams.

Department of Civil Engineering

23.264/265 (2) TECHNOLOGY AND SOCIETY I & II

23.485 (4) ENVIRONMENTAL ENGINEERING II

Includes description of EIA concepts — environmental impact, environmental inventories, environmental assessment - with weighted ranking technique, parameter importance units, environmental impact units, economic impact assessment, non-economic factors, selection of alternatives. Instructor: J. Oleskiewicz.

23.720 (G) TOPICS IN ENVIRONMENTAL ENGINEERING (Energy and the Environment)

Instructor: A.M. Lansdown.

23.794 (G) TOPICS IN ENVIRONMENTAL ENGINEERING II (Movement of Hazardous Cargoes)

Instructor: A.M. Lansdown.

Department of Geography

53.352 (3) ENERGY AND SOCIETY

Instructor: V. Smil.

53.353 (3) INTRODUCTION TO LAND-RESOURCE MANAGEMENT

Instructor: J. Romanowski.

INDIVIDUAL RESEARCH AND WORK:

Henley, T. — NATURAL RESOURCES INSTITUTE

Environmental education; socio-economic impact.

Lansdown, A.M. — CIVIL ENGINEERING

EIA and the transport of hazardous cargoes.

Roberts, L. (293) — SOCIOLOGY

Environmental and social impact assessment (in northern context); northern native employment; member, environmental assessment panel — Shoal Lake Cottage Lot Development; advisor and contributor to Institute for Social and Economic Research.

Tamburi, A.

CIVIL ENGINEERING

EIA as it relates to water resources; impact of river migration in Bangladesh; identification of groundwater pollution plumes; sediment dynamics along the Assiniboine River in Manitoba; underground disposal of mine tailings.

PROGRAM ACTIVITIES:

A. *Natural Resources Institute*

The Institute's objectives are: to teach resource management skills leading to the degree of Master of Natural Resource Management; to conduct useful research in current problems of natural resource management; and to provide a forum for examination of resource issues and thus raise the level of public awareness.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. *Natural Resources Institute*

Les objectifs de l'institut sont: l'enseignement des connaissances dans le domaine de la gestion des ressources menant à une maîtrise en gestion des ressources naturelles, mener une recherche utile dans le cadre des problèmes courants de gestion de ressources naturelles, et servir de forum pour l'examen des problèmes concernant les ressources et de ce fait éveiller l'intérêt du public.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

Location/Endroit: St. John's, Newfoundland

Mailing Address/ Adresse: Memorial University of Newfoundland
Elizabeth Avenue
St. John's, Newfoundland
A1C 5S7

Telephone/ Téléphone: (709) 737-8000

TEACHING:

Department of Geography

GEO 3300 (3) ADVANCED CONSERVATION I

GEO 3301 (3) ADVANCED CONSERVATION II

GEO 3340 (3) TECHNIQUES OF URBAN AND REGIONAL ANALYSIS

GEO 4320 (4) REGIONAL DEVELOPMENT SEMINAR

Application of analytical techniques to developmental issues. Includes aspects of EIA and SIA of major projects.

Faculty of Engineering and Applied Science

ENG 5132 (4) ENVIRONMENTAL CONSERVATION AND MANAGEMENT

ENG 5141 (4) ECONOMIC AND SOCIAL IMPACT OF MAJOR PROJECTS

The course will include general methods of assessing the impact of major projects and the problems associated with the identification and valuation of costs and benefits. While the emphasis will be on the economic costs and benefits, social implications will be considered. A number of specific projects will be studied in greater detail.

ENG 6101 (5) ASSESSMENT OF TECHNOLOGY

Group seminars, each group evaluating the role of engineering technology in society, focussing on the sociological and environmental effects of major projects or developments in Newfoundland.

Note: The above three courses form a part of the "Complementary Studies" program whereby students learn basic concepts of social, economic and environmental importance and apply them to study the impacts of technology.

ENG 8715 (6) ENVIRONMENTAL ENGINEERING

Department of Biology

BIOL 4304 (4) APPLIED ANIMAL BIOLOGY

Department of Earth Sciences

EASC 4611 (4) ENGINEERING AND ENVIRONMENTAL GEOLOGY

INDIVIDUAL RESEARCH AND WORK:

Arockiasamy, M. ENGINEERING

Structural analysis, ocean structures, ice forces.

Bennett, G. BIOLOGY

Monitoring impact of Matacil on non-target insects; consultant to provincial and federal governments; monitoring of environmental impacts on bird communities and aquatic systems.

Booton, M. ENGINEERING

Offshore structures, vibrations.

Chari, T.R. ENGINEERING

Ocean engineering, marine geotechnology, seabed studies; icebergs, iceberg grounding; soil mechanics, foundations, geotechnical engineering.

Christian, A.J. (63, 64, 65) ENGINEERING

Impact of offshore oil and gas on the Newfoundland construction industry. Analysis of productivity on construction projects for offshore production facilities.

Colbo, M.H. (66, 67, 68)	BIOLOGY Interests relate to the fresh water ecosystem with reference to the impacts of man's activities on the watershed, including the use of pesticides.
Dempster, R.T.	ENGINEERING Industrial and engineering development associated with offshore activities.
Draper, D.L. (350)	GEOGRAPHY Consultant to private and public sectors; assessment of potential project impacts; design of EIA/SIA studies; project evaluation.
Hartmann, G.	POLITICAL SCIENCE Social impact assessment of offshore oil development; baseline development for the Hibernia proposal; design of EIA programs.
Hawkins, F.R. (170)	SOCIAL WORK Technical expert to Hibernia Environmental Assessment Panel; consultant to the Community Services Council.
House, D. (175)	SOCIOLOGY Social and economic impact of offshore oil development in Scotland and Newfoundland.
Macko, S.A.	EARTH SCIENCES Chemical characterization of waters, sediments and biological materials for baseline compositions or spill-related contamination by petroleum-related compounds. Associated toxicity of petroleum derivatives.
O'Brien, P.J.	BIOCHEMISTRY Chemical carcinogenesis and biochemical toxicology as related to environment, offshore and industrial pollutants.
Peters, G.R.	ENGINEERING Ocean engineering; engineering education; iceberg hazards to offshore; processing in fishing industry.
Pynn, G.A. (282) Stewart, D.B. Hylton, J.W.	BUSINESS ADMINISTRATION Response of Newfoundland small business to offshore development.
Rahimtula, A.	BIOCHEMISTRY Biochemistry; impact of offshore oil on the oxidative enzymes in seabirds and fish; chemical and toxicological studies of the compounds from crude oil and other environmental pollutants.
Scarlett, M. (353, 354, 355)	GEOGRAPHY Consultant to the private and public sectors; project impact evaluation; impact assessment; public information; design of EIA/SIA programs.
Steele, D.H.	BIOLOGY Predevelopment environmental studies; question of impact prediction.
Storey, K. (337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355)	GEOGRAPHY Consultant to public and private sectors; team member in ESRF/COGLA project on family adaptation to offshore oil and gas employment; study of offshore developments and return migration; monitoring and growth management of offshore development.
Swamidas, A.S.J.	ENGINEERING Response of floating/fixed offshore structures to iceberg/bergy-bit impacts; impact response to fibre-reinforced concrete panels; strength properties of iceberg ice.
White, P. (170)	SOCIAL WORK Technical expert to Hibernia Environmental Assessment Panel.
White, R.	GEOGRAPHY Consultant to private sector on environmental assessment; economic impact of petroleum development.

PROGRAM ACTIVITIES:

A. 1) *Department of Geography*

A major focus of teaching and research undertaken is the management of resources. Environmental assess-

ment, from both a socio-economic and a bio-physical perspective, is an important element in the context of resource development and management policy. Offshore oil and gas represents a new local resource and the assessment of proposed developments is a focus of current research interests of some department members. Much environmental assessment attention is still, however, focussed on the traditional resource sectors, particularly the fishery, together with assessments of infrastructure developments.

2) *Division of Extension Service*

The Extension Service is the unit within Memorial University which serves the community at large. Its function is to be a catalyst for positive change within Newfoundland's unique geographic and demographic realities. The Extension Service has developed adaptive educational methods and tools that serve fishermen, farmers, miners, loggers, community leaders, women, youth and others. These methods and tools include short courses, workshops, seminars, conferences, film, video and community television for support of social animation, visual and performing arts and research. Using a combination of these tools, field coordinators are available to help individuals, organizations and communities to choose appropriate learning methods to develop their cultural, social and economic potential.

3) *Faculty of Engineering and Applied Science*

A study of the social, environmental and economic aspects of engineering serves as a basis for research and teaching in EIA/SIA. Particularly active is the Ocean Engineering Research Group with its focus on offshore development.

4) *Labrador Institute of Northern Studies*

The purpose of the Institute is to stimulate, coordinate and support major university projects or programs designed to promote the wellbeing of, and enhance our knowledge of, Labrador. Recently, the Institute has been involved in studies relating to resource harvesting and settlement, sea-ice navigation and initial social and economic assessment of the Labrador Coast. The Institute also offers a Resource Technicians Training Program.

5) *The Institute of Social and Economic Research*

Under the Institute's auspices, both basic and applied research are conducted into various aspects of the social and economic implications of resource developments. During the past year, ISER researchers have been involved in research on social change in fishing communities, the effects of oil-related development upon Newfoundland society, social and cultural dimensions of the sealing industry in Newfoundland and Labrador, and technological change and safety on offshore fishing trawlers.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA:

1) Field Service coordinators provided assistance in presentations for the Hibernia Environmental Assessment Panel to Newfoundland communities, in particular, the Burin Town Council and the Spanish Room Citizens Committee.

2) The Faculty of Engineering and Applied Science holds Continuing Engineering Education Seminars, many of which deal with offshore issues related to EIA.

3) "In Search of Work: A Working Conference on Speculative Migration." An international conference sponsored by Mobil Oil Canada Ltd; Institute of Social and Economic Research, Memorial University; and Community Resource Services Ltd; St. John's, Newfoundland, February 6-7, 1986.

ACTIVITÉS :

A. 1) *Department of Geography*

Un des principaux objets de l'enseignement et des recherches est la gestion des ressources. L'évaluation environnementale, des points de vue tant socio-économique que biophysique, est un élément important dans le contexte des politiques de mise en valeur et de gestion des ressources. Les gisements hauturiers de pétrole et de gaz constituent une nouvelle ressource locale et certains membres du département axent des recherches sur l'évaluation des exploitations projetées. Cependant, une forte proportion des travaux d'évaluation environnementale est encore axée sur les ressources classiques, particulièrement les pêches, et l'infrastructure.

2) *Division of Extension Service*

Le Division of Extension Service est l'organe de l'université Memorial qui fournit des services au grand public. Il doit favoriser un changement positif des réalités géographiques et démographiques propres à Terre-Neuve. Le service a mis au point des méthodes et des instruments didactiques adaptés aux besoins des pêcheurs, des agriculteurs, des mineurs, des forestiers, des dirigeants, des collectivités, des femmes, des jeunes et d'autres. Il s'agit notamment de brefs cours, d'ateliers, de séminaires, de conférences, de films, de vidéos et d'émissions de télévision communautaire à l'appui de l'animation sociale, des arts visuels, des arts du spectacle et de la recherche dans ces domaines. Grâce à une combinaison de ces instruments, les coordonnateurs peuvent aider les particuliers, les organismes et les collectivités à choisir des méthodes d'apprentissage afin de réaliser leur potentiel culturel, social et économique.

3) *Faculty of Engineering and Applied Science*

L'étude des aspects sociaux, environnementaux et économiques du génie sert de base à la recherche et à l'enseignement en matière d'évaluation des incidences environnementales et sociales. Le Ocean Engineering Research Group, qui met l'accent sur les aménagements hauturiers, est particulièrement actif sous ce rapport.

4) *Labrador Institute of Northern Studies*

L'institut a pour but de stimuler, coordonner et appuyer d'importants projets ou programmes universitaires destinés à favoriser la connaissance et le bien-être du Labrador. Dernièrement, l'institut a réalisé des études sur l'exploitation des ressources et les établissements humains, la navigation dans les glaces de mer et une évaluation sociale et économique initiale de la côte du Labrador. De plus, l'institut donne un cours de formation des techniciens en ressources.

5) *The Institute of Social and Economic Research*

L'institut procède à des recherches fondamentales et appliquées sur divers aspects des incidences sociales et économiques de l'exploitation des ressources. Depuis un an, les chercheurs de l'ISER ont effectué des recherches sur le changement social des collectivités de pêcheurs, les effets des exploitations pétrolières sur la société de Terre-Neuve, les volets social et culturel de l'industrie de la chasse au phoque à Terre-Neuve et au Labrador ainsi que le changement technologique et la sécurité dans le contexte des chalutiers de pêche en haute mer.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales :

1) Les coordonnateurs du service extérieur ont aidé des collectivités de Terre-Neuve, et particulièrement le conseil municipal de Burin et le comité des citoyens de Spanish Room, à établir des exposés destinés à la commission d'évaluation environnementale du projet Hibernia.

2) La Faculty of Engineering and Applied Science tient des colloques d'éducation suivie en matière de génie dont bon nombre portent sur des questions d'exploitation en haute mer ayant trait à l'évaluation des incidences environnementales.

3) "In Search of Work: A Working Conference on Speculative Migration", conférence internationale commanditée par Mobil Oil Canada Ltée, l'Institute of Social and Economic Research, l'université Memorial et Community Resource Services Ltd. de Saint-Jean (T.-N.) et tenue les 6 et 7 février 1986.

UNIVERSITÉ DE MONCTON

Location/Endroit: Moncton (Nouveau-Brunswick)

Mailing Address/ Adresse: Université de Moncton
Moncton (Nouveau-Brunswick)
E1A 3E9

Telephone/ Téléphone: (506) 858-4113

COURS :

École de génie

GG 2520 (2) TECHNOLOGIE DE L'ENVIRONNEMENT

Professeur: N. El-Jabi.

Département de biologie

BI 2301 (2) L'HOMME DANS SON ENVIRONNEMENT

Historique des relations homme-environnement et les possibilités pour l'avenir. Analyse approfondie de l'état actuel de ces relations, au moyen de l'étude des exemples d'impacts positifs et négatifs de l'homme et de son environnement. L'accent est mis sur l'indissociabilité de l'homme et de son environnement. Survol des prévisions des relations homme-environnement à court et à long terme.

RECHERCHE ET TRAVAUX PERSONNELS :

El-Jabi, N. ÉCOLE DE GÉNIE

Aménagement des plaines inondables.

Lapierre, L. (195, 196) BIOLOGIE

Évaluation des contaminants au niveau de la nourriture des animaux. Membre du GREACE (voir «Activités»).

Mallet, V.N. (7, 108, 109, 209, 210) CHIMIE ET BIOCHIMIE

Analyse des échantillons pour le fenitrothion; étude de la dégradation d'aminocarb dans l'environnement. Membre du GREACE (voir «Activités»).

ACTIVITÉS :

A. *Département de chimie et biochimie*

Le Groupe de recherche pour l'évaluation et l'impact des contaminants environnementaux (GREACE) travaille depuis 1982, surtout dans l'évaluation de l'impact environnemental du programme des pulvérisation pour la protection des forêts de conifère au N.-B. contre la tordeuse des bourgeons d'épinette.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

PROGRAM ACTIVITIES:

A. *Département de chimie et biochimie*

The Groupe de recherche pour l'évaluation et l'impact des contaminants environnementaux (environmental contaminants impact and assessment research group) has been working since 1982, primarily to assess environmental impacts of the spruce budworm spraying program for the protection of New Brunswick forests.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

UNIVERSITÉ DE MONTRÉAL

Location/Endroit: Montréal (Québec)

Mailing Address/ Adresse: Université de Montréal
C.P. 6128, Succursale A
Montréal (Québec)

Telephone/ Téléphone: (514) 343-5901

COURS :

Département de géographie

GEO 3003 (3) GÉOGRAPHIE ET ENVIRONNEMENT

Dimension sociale, biophysique et politique de l'environnement. Mutations du paysage (érosion anthropique), affectations de l'environnement (grands projets d'aménagement) : évaluation et analyse. Nature des études d'impact sur l'environnement. Coordonnateur : G. Boileau.

GEO 3573 RESSOURCES ET AMÉNAGEMENT

L'idée d'intervention territoriale. Principes, concepts et méthodes; évolution des politiques et des cadres de l'intervention au Québec. Analyse critique des outils; plans et schémas. Genèse et l'application des plans : les processus de décision. L'évaluation, la mise en valeur des ressources et la gestion du milieu. Coordonnateur : G. Boileau.

Institut d'urbanisme

URB-2160 (2) PROTECTION ET GESTION PUBLIQUE DE L'ENVIRONNEMENT

Étude de quatre nouveaux domaines d'intervention publique étroitement liés à l'aménagement : la protection de l'environnement, les espaces naturels, les sites et arrondissements historiques et naturels, la protection du territoire agricole. Organisation administrative aux divers échelons gouvernementaux; mécanismes de protection et d'intervention; modalités effectives de mise en oeuvre. Examen comparatif et critique des modes adoptés et appliqués dans les quatre domaines d'études. Coordonnateur : M. Gariépy.

URB-6144 (G) ENVIRONNEMENT ET CADRE DE VIE

À partir de dossiers actuels ce laboratoire ouvre l'analyse à la fois vers le processus de planification écologique et vers les études du bien-être, du cadre et de la qualité de la vie comme un des paramètres de l'intervention et de la conception en aménagement. Coordonnateur : M. Gariépy.

URB-6347 (G) URBANISATION ET ENVIRONNEMENT

L'émergence du paradigme environnemental. Ses résonnances épistémologiques, méthodologiques et sociales. Impact des pratiques d'urbanisme sur le champ des problèmes environnementaux : procédés d'intervention; responsabilité des acteurs; rôle des acteurs publics et privés, moyens de concertation. Nouvelles composantes du processus et du dossier d'urbanisme. Coordonnateur : B. Blanc.

URB-6348 (G) INDICATION ET ÉVALUATION ENVIRONNEMENTALE

Position de l'indication et de l'évaluation environnementale dans le processus de la planification et impact sur la décision. Problématiques et instruments de gestion des ressources, d'évaluation des potentiels et d'évaluation des impacts. Méthodologie des études d'impact. Orientation et méthode des indications de la qualité du cadre de vie. Coordonnateur : M. Gariépy.

URB-6349 (G) SÉMINAIRE SUR LA QUESTION ENVIRONNEMENTALE ET LA PRATIQUE DE L'URBANISME

Les conditions nouvelles de la pratique de l'urbanisme à l'occasion de l'extension de la question environnementale : nouvelles connaissances, nouveaux paradigmes de

l'action; dimensions sociales nouvelles des conditions d'équité et de justice; processus de planification écologique; champ de la politique environnementale et positionnement de l'urbanisme dans ce champ; méthodes et techniques d'intervention du nouvel urbanisme dans le contexte de la question environnementale. Coordonnateur : R. Parenteau.

Département de sociologie

SOL 3200 (3) SOCIOLOGIE DE L'ENVIRONNEMENT

Rapport homme-environnement. Aspects socio-économiques, politiques et culturels. Coordonnateur : J.-G. Vaillancourt.

SOL 6730 3 (G) ANALYSE DES MICRO-SYSTÈMES SOCIAUX

Coordonnatrice : C. Carisse.

Département de sciences biologiques

BIO 3892 (3) CALCUL D'IMPACTS, AMÉNAGEMENT AQUATIQUE

Technique d'évaluation d'impact de projet sur l'environnement. Méthodes de Léopold, Batelle, Sorensen, Holmes, Odum, etc. Principaux types d'aménagement en milieux aquatiques : utilisation des berges, ensemencement, frayères, passes migratoires, etc. Visites sur le terrain. Coordonnatrice : B. Pinel-Alloul.

RECHERCHE ET TRAVAUX PERSONNELS :

Benoit, A. (263, 264) — INSTITUT D'URBANISME

Étudiante à la maîtrise en urbanisme. Impact sur le camp urbain du processus d'enquête et d'audience publique sur l'environnement au Québec.

Blanc, B. — INSTITUT D'URBANISME

Pratiques institutionnelles d'évaluation d'impact et de l'audience publique sur l'environnement.

Decoste, S. — INSTITUT D'URBANISME

Étudiant au programme de maîtrise en urbanisme. Évaluation des mécanismes de suivi et de contrôle environnemental.

Domon, G. — INSTITUT D'URBANISME

L'inventaire, la classification et la cartographie écologiques, en tant qu'outils d'aménagement.

Gariépy, M. (139, 140, 334) — INSTITUT D'URBANISME

Evaluations environnementales; spécialisé en planification environnementale; pratiques institutionnelles d'évaluation d'impact et de l'audience publique sur l'environnement.

Gauthier, M. — INSTITUT D'URBANISME

Étudiante à la maîtrise en urbanisme. Le concept d'impact social, sa place dans les procédures et les méthodes d'évaluation; son émergence dans la procédure québécoise.

Kadima, K. — INSTITUT D'URBANISME

Étudiant à la maîtrise en urbanisme. Travail dirigé : Les bidonvilles et les problèmes d'environnement. Le cas de Kinshasa.

Keogh, B. (189) — GÉOGRAPHIE
L'impact social du tourisme.

Ouellet, B. — INSTITUT D'URBANISME

Assistant de recherche. Implantation des structures de gestion concertée des ressources. Étude comparative des pratiques institutionelles d'évaluation environnementale.

Parenteau, R. (263, 264) — INSTITUT D'URBANISME

Spécialisé en sociologie de l'environnement; une subvention de recherche de l'OTAN (Comité des défis des sociétés modernes), pour étudier les rapports entre les politiques environnementales et les politiques d'aménagement; pratiques institutionnelles de l'évaluation d'impact et de l'audience publiques sur l'environnement.

Phaneuf, Y.	INSTITUT D'URBANISME Étudiant au programme de maîtrise en urbanisme. Étude de l'application des méthodes multicritères d'aide à la décision au processus d'évaluation environnementale.
Soubeyran, O. (334)	INSTITUT D'URBANISME Pratiques institutionnelles de l'évolution d'impact et de l'audience publique sur l'environnement.
Trépanier, M.-O.	INSTITUT D'URBANISME Spécialisé en droit de l'environnement; pratiques institutionnelles de l'évaluation d'impact et de l'audience publique sur l'environnement.
Vaillancourt, J.-G. (8, 378, 379, 380, 381, 382)	SOCIOLOGIE La sociologie du mouvement écologique et son influence sur les perceptions québécoises.

ACTIVITÉS :

A. 1) *Département de géographie*

Le département vise à donner à ses étudiants une connaissance solide des bases de la science géographique (organisation de l'espace, analyse spatiale) et ainsi à former des géographes aptes à l'enseignement, au travail dans la fonction publique, l'entreprise privée ou la recherche fondamentale. Les programmes ont été entièrement refondus, permettant une meilleure adéquation de la formation proposée aux besoins actuels de la société.

Depuis l'année académique 1984-1985 le département offre des programmes de spécialité et de majeur en géographie environnementale. Ces programmes pluridisciplinaires regroupent des cours en provenance des départements de géographie, biologie, géologie, chimie, physique, architecture, urbanisme et sociologie. Les aspects physiques et sociaux de la pollution environnementale sont étudiés.

2) *Institut d'urbanisme*

La recherche et l'enseignement dans le domaine des évaluations environnementales se font sous l'angle de l'aménagement et de la planification de l'environnement. On porte un intérêt particulier aux méthodes employées pour déterminer les incidences des projets d'exploitation.

3) *Département de sociologie*

Le programme offert se rapporte directement aux incidences sociales des grands projets d'exploitation. L'étude de la sociologie de l'environnement revêt une importance particulière.

4) *Centre de recherche écologique de Montréal (CREM)*

Le CREM entreprend des études qui portent sur les composants biologiques et physiques des milieux terrestres, et des eaux douces et salées. Il s'efforce également d'identifier les éléments écologiques d'une utilisation rationelle des ressources qui tienne compte à la fois de la protection et de la conservation de l'environnement.

B. Programme spécifique aux évaluations environnementales?

Non. Cependant, comme d'autres, cette institution possède les ressources et la compétence nécessaires pour permettre d'étudier ce domaine.

C. Activités se rapportant aux évaluations environnementales :

1) 12 février 1986 : Dr. Christian Bryant, University of Waterloo. Séminaire sur l'impact de l'urbanisation sur la frange urbaine.

2) Novembre 1986 : M.G. Francoeur, Communauté urbaine de Montréal. Séminaire sur la pollution de l'air dans la ville de Montréal.

PROGRAM ACTIVITIES:

A. 1) *Département de géographie*

The department tries to give its students a sound basic knowledge of geography (organization of space), and to train geographers who can work in education, the public service, private industry or basic research. The programs have been completely redesigned, making the proposed training more apt to meet society's current needs, including the field of EIA.

Since the 1984-85 academic year, the department has been offering honours and concentration programs in environmental geography. These multidisciplinary programs combine courses from the departments of geography, biology, geology, chemistry, physics, architecture, urban development and sociology. The physical and social aspects of environmental pollution are studied.

2) *Institut d'urbanisme*

The research and teaching of EIA topics are approached as they relate to the management and

planning of the environment. The methodologies used in determining the impact of development projects are a particular focus.

3) *Département de sociologie*

The program that is offered directly relates to the social impacts caused by major development projects. Of particular note is the study of the sociology of the environment.

4) *Centre de recherches écologiques de Montréal (CREM)*

The Centre de recherches écologiques de Montréal (CREM) specializes in doing studies in the biophysical sciences for terrestrial and fresh or salt-water environments. It also does research related to ecology as it could pertain to rational resource use and environmental conservation.

B. EIA Core Program or Streaming?

No; however, as in other institutions the facilities and expertise are available to allow one to pursue study in this area.

C. Activities Related to EIA:

1) February 12, 1986: Dr. Christian Bryant, University of Waterloo. Seminar on the impact of urbanization on the urban fringe.

2) November, 1986: M.G. Francoeur, Communauté urbaine de Montréal. Seminar on air pollution in the city of Montreal.

UNIVERSITY OF NEW BRUNSWICK

Location/Endroit: Fredericton, New Brunswick

Mailing Address/ Adresse: P.O. Box 4400
Fredericton, New Brunswick
E3B 5A3

Telephone/ Téléphone: (506) 453-4995

TEACHING:

Department of Civil Engineering

CE3401 (3) INTRODUCTION TO ENVIRONMENTAL ENGINEERING

Instructor: G.B. Ward.

CE5402 (4) ENVIRONMENTAL PLANNING FOR CAPITAL WORKS

The objectives of the course are to assist planners and engineers in making environmentally sound decisions on land use and to guide practitioners in facility siting. Specific topics covered include an introduction to environmental planning, land capability and suitability analysis, environmental administration and legislation in Canada, land planning for capital projects, environmental impact analysis, environmental modelling, socio-economic planning and impact analysis, and decision-making for siting facilities. Instructor: G.B. Ward.

CE5432 (4) SITE PLANNING

To better appreciate the comprehensive nature of site analysis and the physical, social and environmental impacts of engineering works on a site and its surroundings. To incorporate site characteristics which enhance project costs, appearance and energy efficiency. Instructor: M. Ircha.

Faculty of Law

LAW 3450 (3) LAW AND THE NATURAL ENVIRONMENT

The primary aim of the course is to establish an analytical framework for evaluating environmental issues: first, through a consideration of the characteristics of environmental problems (causes and effects); second, through an evaluation of the peculiar difficulties these problems pose for the traditional legal system; and finally, by an examination of the various responses that legal, economic and administrative institutions have made or might make to environmental issues. The concept and practice of EIA (both federally and provincially) as a tool for preventing environmental deterioration is examined in detail. Instructor: H.N. Versteeg.

Department of Psychology

PSYC 3853 (3) ENVIRONMENTAL PSYCHOLOGY

The interaction of human beings with their physical environment. The application of psychology to such issues as environmental perception (urban-architectural design); environmental decision-making and problem-solving (planning); psychosocial aspects of environmental disputes.

The course deals with limitations placed on EIA, and other forms of environmental problem-solving, by the present level of expertise. Instructor: A. Miller.

INDIVIDUAL RESEARCH AND WORK:

Duinker, P.N. (14, 15, 16, 17, 18, 19, 20, 100, 101, 102, 103, 104, 105) — FACULTY OF FORESTRY

Report on ecological basis of EIA; annotated bibliography on ecology and EIA; several papers on EIA procedures, offshore EIA, scientific basis of EIA, impact prediction, monitoring of effects, and impact significance; current Ph.D. research entails the development of a conceptual framework for impact forecasting in EIA, using as a case study the use of herbicides in silviculture.

Lin, K.C. — CIVIL ENGINEERING

Environmental impact studies on the Saint John River basin.

Miller, A. (228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239)	PSYCHOLOGY Environmental psychology; psychosocial factors in environmental problem-solving; professional competence in environmental management.
Versteeg, H.N	FACULTY OF LAW Theory of EIA.
Ward, G.B.	CIVIL ENGINEERING EIA of sanitary landfills; hazardous waste management.

PROGRAM ACTIVITIES:

A. None indicated.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. Aucunes.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

NOVA SCOTIA COLLEGE OF ART AND DESIGN

Location/Endroit: Halifax, Nova Scotia

Mailing Address/ Adresse: Nova Scotia College of Art & Design
5163 Duke Street
Halifax, Nova Scotia
B3J 3J6

Telephone/ Téléphone: (902) 422-7381

TEACHING:

Department of Environmental Planning

SOCIAL PLANNING — INTERMEDIATE

One section of the course deals exclusively with EIA. Instructor: J. Grant.

ENVIRONMENTAL PLANNING III — STUDIO — INTERMEDIATE

Community Planning Methods — specific projects which may involve SIA or elements of it. Instructor. J. Grant.

LAND USE PLANNING — ADVANCED

One section of the course deals with EIA methodology using a survey format and case studies. Emphasis is on the regional and site-specific scale and relates principally to EIA of proposed development projects. Instructor: G.R. Parker.

ENVIRONMENTAL ISSUES — INTERMEDIATE

The course will examine a number of land use, conservation and resource development problems encountered in Nova Scotia through a series of case studies and field trips. These will include an analysis of such topics as acid rain, the pollution of lakes, tidal power, oil and gas pipelines, national parks, fisheries and other natural resource development. Each case study will be examined in terms of natural or scientific processes as well as the philosophical or ethical assumptions of traditional environmentalists. The course compares Canadian impact assessment techniques with those of the U.S. and Great Britain. Focus includes large-scale resource development projects, e.g., petrochemicals, housing developments and energy projects.

ENVIRONMENTAL PLANNING — METHODS — INTERMEDIATE

The course examines various impact assessment techniques for assessing the ecological suitability of the terrestrial environment for a variety of uses. The works of McHarg, Hill, Lewis, Steinitz, Dorney and others are discussed, compared and evaluated. This course emphasizes methods of synthesis rather than analysis. Field survey techniques for environmental quality measurement are also presented.

ENVIRONMENTAL PLANNING I — RESOURCE ANALYSIS AND MANAGEMENT — INTERMEDIATE

Natural resource analysis techniques are introduced. Biophysical investigations are undertaken on a variety of landforms in selected regions of Nova Scotia. The course basically reviews assessment techniques used to investigate the suitability of various environments for a variety of uses. Investigations include: bedrock geology, surficial geology, physiography, soils, climate, hydrology, vegetation, wildlife, visual resources, and land use. The course utilizes air photo interpretation lectures, field trips and a major studio project to apply suitability techniques.

ADVANCED STUDIO PROJECTS — ADVANCED

Selected projects on a site-specific basis incorporate elements of environmental and social impact assessment work through land analysis and capability assessment, demographic analysis and social impact assessment, and management guidelines for mitigating undesirable impacts.

INDIVIDUAL RESEARCH AND WORK:

Grant, J.	ENVIRONMENTAL PLANNING Social feasibility studies of development projects in West New Britain, Papua New Guinea.
Parker, G.R. (265)	ENVIRONMENTAL PLANNING *Venture EIS Aesthetic Environment*, Mobil Oil Canada Ltd, 1982 — considerations for site selection, design and development of onshore facilities including: landfall site, pipeline corridor, and gas plant installation; landscape characteristics and visual design opportunities.

PROGRAM ACTIVITIES:

A. *Environmental Planning Department*

The Department offers courses and promotes research on EIA from the planning perspective.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: Site-specific project and contract work with municipal and provincial government agencies. Also contract work with Parks Canada dealing with EIA.

ACTIVITÉS :

A. *Environmental Planning Department*

Le département offre des cours et encourage la recherche sur l'évaluation environnementale du point de vue de la planification.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Projet à emplacement précis et travaux contractuels avec les autorités provinciales et municipales. Egalement, travaux contractuels avec Parcs Canada concernant l'évaluation environnementale.

UNIVERSITY OF OTTAWA/UNIVERSITÉ D'OTTAWA

Location/Endroit: Ottawa, Ontario

Mailing Address/ Adresse: University of Ottawa/ Université d'Ottawa Ottawa, Ontario K1N 6N5

Telephone/ Téléphone: (613) 564-3928

TEACHING/COURS:

Civil Engineering/Génie civil

CVG 2130 (2) INTRODUCTION TO ENVIRONMENTAL ENGINEERING

Instructor: R.L. Droste.

CVG 5139 (G) ENVIRONMENTAL ASSESSMENT OF CIVIL ENGINEERING PROJECTS

Environmental assessment review - methodology and Canadian case studies. Instructor: P. Wisner.

Geography/Géographie

GEG 3302 (3) RESOURCE MANAGEMENT: AN ECONOMIC APPROACH

Instructor: R. Needham.

GEG 4119 (4) RESOURCE MANAGEMENT: COASTAL AND SHORELINE ENVIRONMENTS

Instructor: R. Needham.

GEG 4313 (4) PRACTICES AND TECHNIQUES OF RURAL, REGIONAL AND URBAN PLANNING

Instructor: B. Wellar.

GEG 4319 (4) RESOURCE MANAGEMENT: SEMINAR ON CONTEMPORARY ISSUES

Instructor: R. Needham.

GEG 5001 (G) SEMINAR: EARTH SCIENCES/ SÉMINAIRE : SCIENCES DE LA TERRE

Instructors/Coordonnateurs: M. Geurts and/et P. Johnson.

GEG 5002 (G) SEMINAR: URBAN/ECONOMIC GEOGRAPHY/SÉMINAIRE : GÉOGRAPHIE URBAINE/ ÉCONOMIQUE

Instructor/Coordonnateur: R. Roberge.

GEG 5003 (G) SEMINAR: RESOURCES MANAGEMENT/ SÉMINAIRE : GESTION DES RESSOURCES

Instructor/Coordonnateur: R. Needham.

Biology/Biologie

BIO 4101/ BIO 4501 (4) PESTICIDES AND THE ENVIRONMENT/LES PESTICIDES ET L'ENVIRONNEMENT

Instructor/Coordonnateur: B.J.R. Philogène.

BIO 4112 (4) ECOTOXICOLOGY OF PLANTS

Instructor: P. Weinberger.

BIO 9101 (G) ENVIRONMENTAL TOXICOLOGY

Instructor: P. Weinberger.

BIO 9104 (G) ECOTOXICOLOGY: AGRICULTURAL IMPLICATIONS

Instructor: P. Weinberger.

BIO 9105 (G) TOPICS IN ECOTOXICOLOGY

Instructor: P. Weinberger.

INDIVIDUAL RESEARCH AND WORK/RECHERCHE ET TRAVAUX PERSONNELS:

Alvo, M. MATHEMATICS/ MATHÉMATIQUES

Mathematical methods for trend analysis; mathematical modelling for the assessment of environmental changes; development of sampling schemes for baseline data collection.

French, H.	GEOGRAPHY/GÉOGRAPHIE	Environmental assessment and development in northern regions.
Gagnon, H.	GEOGRAPHY/GÉOGRAPHIE	Utilisation et aménagement des sols; contrôle aérien de l'environnement.
Logan, B.	PHYSICS/PHYSIQUE	Assessment of nuclear radiation hazards.
Needham, R.	GEOGRAPHY/GÉOGRAPHIE	Research into EIA, including media coverage and public participation.
Philogène, B.	BIOLOGY/BIOLOGIE	Environmental impact assessment of pesticides; consultant on pesticides to CIDA.
Weinberger, P. (242, 389, 390, 391)	BIOLOGY/BIOLOGIE	Ecotoxicological effects of pesticides, herbicides and their adjuvants in formulations; monitoring of community, population, physiological and cellular effects on some target and non-target aquatic and terrestrial phytobiota.
Wellar, B.	GEOGRAPHY/GÉOGRAPHIE	Urban, rural and regional planning; economic geography; urban geography; public policy analysis research methods and techniques; information systems.
Wisner, P.	CIVIL ENGINEERING/GÉNIE CIVIL	Environmental impact of energy projects; environmental studies for the nuclear generating station at Point Lepreau, New Brunswick, and the Wreck Cove hydroelectric development in Nova Scotia.

PROGRAM ACTIVITIES:

A. 1) *Department of Civil Engineering*

Environmental assessment is studied in the Department's environmental engineering program. Topics related to water resources development and water quality preservation are major focal points in the program.

2) *Department of Geography*

Programs in graduate and undergraduate teaching and research address various aspects of EIA. The department has particular strength in northern studies and resource analysis and management.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. 1) *Département de génie civil*

L'évaluation environnementale est étudiée dans le cadre du programme de génie de l'environnement du département. Ces travaux portent en particulier sur l'exploitation des ressources en eau et la conservation de la qualité de l'eau.

2) *Département de géographie*

Les programmes pour les étudiants diplômés et non diplômés, dans le domaine de l'enseignement et de la recherche, portent sur divers aspects de l'évaluation environnementale. Le département est particulièrement qualifié en études nordiques et en l'analyse et la gestion des ressources.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

UNIVERSITÉ DU QUÉBEC À CHICOUTIMI

Location/Endroit: Chicoutimi (Québec)

Mailing Address/
Adresse: Université du Québec à Chicoutimi
555, boul. de l'Université
Chicoutimi (Québec)
G7H 2B1

Telephone/
Téléphone: (418) 545-5011

COURS :

Département des sciences humaines

4 GEO 515 ÉVALUATION DES RESSOURCES NATURELLES

Le concept de «ressource naturelle» et sa place dans la géographie moderne. Les techniques d'analyse et d'évaluation intégrées des ressources naturelles : le «capital naturel.» L'utilisation des ressources naturelles, leur dégradation, et les politiques de conservation et de renouvellement. Études d'impact reliées à l'exploitation des ressources naturelles.

Département des sciences humaines

4 DRO 100 BASES D'UNE LÉGISLATION ET D'UNE GESTION DE L'ENVIRONNEMENT

L'objet de ce cours est de préciser comment la loi humaine doit refléter les lois biologiques fondamentales. Aperçu de la législation environnementale actuelle. Études de deux exemples : le bill 34 au Québec et l'évolution de la législation mésologique aux États-Unis.

Département des sciences fondamentales

IMPA 813 (G) ÉTUDES D'IMPACT

Donner les connaissances pratiques des techniques et méthodes de ceuillette d'analyse, de classification, d'interprétation et de représentation des données. Permettre d'identifier les éléments critiques du milieu les plus susceptibles d'être affectés par une action naturelle ou artificielle, évaluer la nature et l'intensité de l'impact et proposer les formules de correction. Développer les méthodologies et les techniques. Identification sur le terrain et opérations. Éléments biophysiques. Divers instruments et techniques. Collection. Analyse et interprétation. Représentation cartographique, photographique, etc. Étude d'impact. Choix des éléments. Productivité et impact. Problèmes pratiques d'étude d'impact, techniques d'intervention. Utilisation de l'informatique.

RECHERCHE ET TRAVAUX PERSONNELS :

Désy, J. GÉOGRAPHIE

Enquête sur les lieux des études en développement et aménagement au Québec.

Gauthier, M.-J. GÉOGRAPHIE

Inventaire des ressources et du potentiel biophysique des monts Valin.

Klein, J.-L. (189) GÉOGRAPHIE

Enquête sur les lieux des études en développement et aménagement au Québec.

ACTIVITÉS :

A. 1) *Certificat de premier cycle en sciences de l'environnement*

Ce programme en sciences environnementales a pour but d'initier les étudiants soit à la méthodologie, soit aux problèmes actuels.

2) *Centre d'études sur les ressources minérales*

Le Centre a comme objectif de contribuer à la mise en valeur des ressources minérales du Moyen Nord québécois et de la région Saguenay-Lac St-Jean. Le Centre possède deux grands volets de recherche dont l'un porte sur l'exploitation des ressources minérales et l'autre sur le développement des ressources minérales.

Dans le cadre de ce second volet, une équipe du CERM oeuvre sur l'impact environnemental du développement des ressources minérales dans les régions précitées. Le Centre possède également un service de documentation qui se spécialise dans l'acquisition d'informations non publiées relatives au Moyen Nord québécois.

3) *Maîtrise en productivité aquatique*

Le Département des sciences fondamentales offre un programme de Maîtrise en productivité aquatique; c'est un programme multidisciplinaire dans lequel sont retrouvés quelques cours portant sur l'évaluation des incidences environnementales.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales :

Le 53e Congrès annuel de l'ACFAS (Association Canadienne Française pour l'Avancement des Sciences). Plusieurs colloques ont eu lieu dont en voici quelques-uns :

- L'impact social des technologies nouvelles
- Antibiotiques et environnement
- L'océanographie du fjord du Saguenay
- Aménagement et/ou développement : vers de nouvelles pratiques.

PROGRAM ACTIVITIES:

A. 1) *Certificat de premier cycle en sciences de l'environnement*

The objective of this program is to introduce students to the environmental sciences, their methodologies and some concrete problems which pertain to the environment and its study.

2) *Centre d'études sur les ressources minérales*

The objective of the centre is to contribute to development of mineral resources in the Quebec Middle North and the Saguenay-Lac-St-Jean area. The centre focusses on two major areas of research: the exploitation of mineral resources and the development of mineral resources.

Under the heading of resource development, a centre team is studying the environmental impact of mineral resource development in the above-mentioned areas. The centre also has a documentation service specializing in the acquisition of unpublished information on the Quebec Middle North.

3) *Maîtrise en productivité aquatique*

The department of fundamental sciences offers a Master's program in aquatic productivity; this is a multidisciplinary program which includes several courses dealing with environmental impact assessment.

B. EIA Core Program or Streaming? None indicated.

C. Activities related to EIA:

53rd annual congress of the Association Canadienne Française pour l'Avancement des Sciences. Many symposia were held, including:

- Social impact of new technologies
- Antibiotics and the environment
- Oceanography of the Saguenay fjord
- Management and/or development: toward new practices.

UNIVERSITÉ DU QUÉBEC À MONTRÉAL

Location/Endroit: Montréal (Québec)

Mailing Address/ Adresse: Université du Québec à Montréal
Case postale 8888
Montréal (Québec)
H3C 3P8

Telephone/ Téléphone: (514) 282-3000

COURS :

Département d'études urbaines

URB 4017 (4) MÉTHODES D'ÉVALUATION ET DE PRÉVISION EN URBANISME

Cours ayant pour but l'apprentissage de diverses techniques d'appréciation des projets en milieux urbain, et régional. Accent mis sur l'analyse avantage-coûts comme méthode d'évaluation unidimensionnelle. Initiation à des méthodes d'évaluation multi-critères, multi-objectifs, intégration des variables qualitatives et des indicateurs sociaux à l'analyse. Étude critique de la contribution des différentes approches méthodologiques. Le traitement de risque et d'incertitude dans l'évaluation des projets. Simulations, prévision et évaluation dans le processus de décision. Méthodes empiriques de prévision : les indices, la moyenne mobile simple et double, le lissage exponentiel, etc.

Modèles prospectifs : les concepts-clés de la prospective et les méthodes de base : scénarios, approches psychosociologiques, indicateurs sociaux, etc.

URB 4027 (4) ÉTUDES D'IMPACT ENVIRONNEMENTAL

Cours axé sur l'application de diverses techniques d'évaluation dans le cadre d'études d'impact des projets sur l'environnement urbain. Accent mis sur l'innovation en matière de conservation de l'énergie et sur la recherche de nouvelles formes de développement. Coordonnateur : C. Veltman.

URB 5013 (4) ÉCOSYSTÈMES ET ÉQUIPEMENTS COLLECTIFS

Département des sciences biologiques

BIO 5051 PROBLÈMES ET INTERVENTIONS EN BIOLOGIE

Étude de problèmes contemporains en biologie et environnement. Analyse critique du rôle des biologistes, de l'influence des facteurs économiques, politiques et idéologiques sur les pratiques scientifiques. Études de cas et préparation de dossiers dans des domaines variés : manipulations génétiques, sociobiologie, condition féminine, santé et sécurité au travail, agriculture biologique et technologie agricole, études d'impacts sur l'environnement, etc.

BIO 6800 (G) AMÉNAGEMENT

Étude des aménagements rendus nécessaires par les activités de la société technologique. Définition de l'aménagement et de la conservation. Les activités humaines et leur impact sur l'environnement. Aménagements possibles pour minimiser les impacts négatifs de ces activités sur l'environnement. Techniques d'aménagement et de protection de l'environnement dispensées sous forme de conférences par des spécialistes.

BIO 7399 (G) GESTION DE L'ENVIRONNEMENT

Département d'économie

ECO 1470 ÉCOLOGIE, ÉCONOMIE ET ENVIRONNEMENT

ECO 3470 ÉCONOMIE DE L'ENVIRONNEMENT

Département des sciences juridiques

JUR 1046 DROIT DE L'ENVIRONNEMENT

Ce cours se propose d'étudier le système juridique de protection de l'environnement à partir d'un constat : la pénétration de plus en plus grande du droit dans les rapports sociaux. L'étude du droit de l'environnement se fera autour de dossiers permettant un recoupement des solutions juridiques : par

exemple, la Baie James, les îles du Saint-Laurent, les pluies acides, les ententes internationales. Une partie du cours sera consacrée aux audiences publiques et aux diverses procédures de consultation des citoyens. L'action des groupes de pression a-t-elle une influence sur le contenu des règles de droit? Préalable(s) : JUR 1023 DROIT DE L'ENVIRONNEMENT.

Le programme de maîtrise en sciences de l'environnement

ENV 8020 (G) PROBLÈMES ENVIRONNEMENTAUX

Le premier volet comporte l'examen des lois et règlements des niveaux d'autorité et des modes d'intervention juridique relatifs à l'environnement. Dans un deuxième temps, sous la direction d'experts praticiens, on procède à l'analyse de méthodes d'évaluation d'impacts, de cas types d'inventaire, de restauration et d'aménagements de territoires en fonction de leur environnement.

RECHERCHE ET TRAVAUX PERSONNELS :

Béron, P. PHYSIQUE

Modélisation du phénomène pluie-ruissellement-impact.

Berraja, M. GÉOGRAPHIE

Impacts des sites miniers sur la qualité de l'eau.

Chevalier, G. SCIENCES BIOLOGIQUES

Impacts cellulaires des pluies acides chez le poisson.

Coderre, D. SCIENCES BIOLOGIQUES

Étude de l'impact des pratiques sylvicoles sur les lumbricidés du Québec méridional. Impact des politiques sylvicoles sur la pédofaune utile de la région de Mirabel.

Dansereau, P. PROFESSEUR ÉMÉRITE

Écosystèmes et l'écologie urbaine.

Dénizeau, F. CHIMIE

Étude des propriétés toxiques des agents de l'environnement.

Fournier, M. SCIENCES BIOLOGIQUES

Immunotoxicologie de l'environnement. Étude des effets de xénobiotiques de l'environnement (insecticides, herbicides, etc.) sur la réponse immunitaire et les conséquences sur la susceptibilité aux infections virales, bactériennes et aux cancers; mise au point d'une trousse d'évaluation de l'état de la réponse immunitaire et du degré d'intoxication.

Hamel, C. SCIENCES BIOLOGIQUES

Études préliminaires d'impacts sur l'environnement biophysique; aménagement du lac des Deux-Montagnes, de la rivière des Mille Îles et de la rivière des Prairies.

Joyal, R. (182, 183) SCIENCES BIOLOGIQUES

Effets des corridors hydro-électriques.

Planas, D. SCIENCES BIOLOGIQUES

Impacts de la création de réservoirs sur les écosystèmes aquatiques. Les précipitations acides. Étude de l'effet des pluies acides sur les communautés d'algues, de benthos et de vertébrés aquatiques.

Tellier, L.-N. ÉTUDES URBAINES

Président du comité de consultation, étude de faisabilité, Archipel, projet d'aménagement des eaux de l'archipel de Montréal, Secrétariat d'État à l'aménagement.

ACTIVITÉS :

A. 1) *Maîtrise en sciences de l'environnement*

Le programme de maîtrise en sciences de l'environnement s'adresse aux étudiants issus de diverses disciplines scientifiques. Ainsi, l'enseignement, la recherche, l'encadrement et la gestion sont assurés par des membres des départements de chimie, de géographie, de physique, des sciences biologiques et des sciences de la terre. Certains éléments du programme forcent l'étudiant à s'inté-

grer à une équipe multidisciplinaire alors que d'autres s'adressent aux spécialistes disciplinaires.

2) *Certificat de premier cycle en sciences de l'environnement*

Le programme vise à donner un enseignement relié plus particulièrement aux aspects relevant des sciences physiques. Il offre aux étudiants la possibilité d'acquérir des connaissances variées leur permettant d'établir des relations entre les diverses disciplines pertinentes dans la résolution d'un problème environnemental.

3) *Certificat de premier cycle en écologie*

Le programme vise à fournir une formation de base dans le domaine de l'écologie : par l'acquisition des notions de biologie nécessaires à la compréhension de l'équilibre des écosystèmes et par l'apprentissage des principales techniques utilisées en écologie terrestre et aquatique. Le programme s'adresse à ceux qui, déjà engagés sur le marché du travail, désirent acquérir des connaissances en écologie, et à ceux qui veulent jouer un rôle dans l'utilisation rationnelle et la conservation des ressources renouvelables.

4) *Doctorat en sciences de l'environnement*

L'UQAM a déposé un projet de doctorat interdisciplinaire en sciences de l'environnement qui devrait être offert à l'automne 1986. Un projet de thèse en évaluation environnementale, disciplinaire ou interdisciplinaire, peut être accepté dans la mesure où il répond aux exigences de recherche scientifique.

5) *Laboratoire en toxicologie de l'environnement*

La laboratoire en toxicologie de l'environnement regroupe les travaux de plusieurs équipes spécialisées dans l'évaluation des impacts de divers agents toxiques sur la santé humaine.

Plus précisément, les objectifs du laboratoire sont: l'étude des effets moléculaires et cellulaires des xénobiotiques de l'environnement chez les organismes vivants; la recherche des mécanismes d'action de ces contaminants; la définition d'indicateurs précoces d'exposition et de toxicité; l'élaboration éventuelle de trousses susceptibles de rendre opérationnel le dépistage de ces indicateurs; la formation de nouveaux spécialistes capables d'intervenir face à des problèmes concrets de santé environnementale, y inclus ceux particuliers à l'environnement de travail.

B. Programme spécifique aux évaluations environnementales?

Aucun programme particulier en matière d'évaluation environnementale n'existe, mais compte tenu de la flexibilité des programmes, l'étudiant peut pratiquement se constituer une concentration «à la carte» en matière d'évaluation des incidences environnementales et sociales.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

PROGRAM ACTIVITIES:

A. 1) *Maîtrise en sciences de l'environnement*

The aim of this M.Sc. program is the education of professionals with practical skills in environmental and resource management. Its teaching staff, research facilities and priorities and administration come from the departments of chemistry, geography, physics, and the biological and earth sciences.

2) *Certificat de premier cycle en sciences de l'environnement*

The objective of this program is to offer students the opportunity to acquire a varied understanding of the physical sciences and their interrelations, and their application in dealing with problems which pertain to the environment.

3) *Certificat de premier cycle en écologie*

The purpose of this program is to offer students a basic understanding of ecology. They acquire the basic concepts in biology needed to appreciate the interrelationships within the ecosystem, as well as the main techniques used in terrestrial and aquatic ecology. The program is both for those already working in the field and those who wish to become involved in the rational use and conservation of renewable resources.

4) *Doctorat en sciences de l'environnement*

UQAM has proposed an interdisciplinary doctoral program in environmental science that should be offered in the fall of 1986. A proposed environmental assessment thesis, disciplinary or interdisciplinary, may be accepted insofar as it is consistent with scientific research requirements.

5) *Laboratoire en toxicologie de l'environnement*

The environmental toxicology laboratory brings together the work of many teams specialized in assessing the impact of various toxic agents on human health. More specifically, laboratory objectives are to study the molecular and cellular effects of environmental xenobiotics on biota, conduct research on the active mechanisms of these contaminants, define early exposure and toxicity indicators, eventually develop kits for operational detection of such indicators, and train new specialists to deal with concrete environmental health problems including those that are specific to the work environment.

B. EIA Core Program or Streaming?

There is no specific program in EIA, but because of the flexibility inherent in certain programs, a student may develop a concentration in EIA by selecting the appropriate courses.

C. Activities related to EIA: None indicated.

UNIVERSITÉ DU QUÉBEC À RIMOUSKI

Location/Endroit: Rimouski (Québec)

Mailing address/ Adresse: Université du Québec à Rimouski
300, avenue des Ursulines
Rimouski (Québec)
G5L 3A1

Telephone/ Téléphone: (418) 723-1986

COURS :

Module de sociologie

SOC 206-82 (2) ÉCOLOGIE ET SOCIÉTÉ

Maîtrise en développement régional

DEV 713-81 (G) ÉCONOMIE DES RESSOURCES NATURELLES

Le modèle économique pour l'exploitation des ressources naturelles. Ressources renouvelables. Ressources non-renouvelables. Approche statique et approche dynamique. Outils économiques pour une intervention publique. Rôle et importance des ressources naturelles dans le développement économique. Problèmes des régions-ressources.

DEV 721-81 (G) LE CADRE NATUREL DE L'AMÉNAGEMENT DU TERRITOIRE

RECHERCHE ET TRAVAUX PERSONNELS :

Jean, B. SOCIOLOGIE

L'écodéveloppement et l'identification d'une stratégie de développement régional adapté à la situation des régions périphériques québécoises, comme l'Est du Québec.

ACTIVITÉS :

A. 1) *Maîtrise en développement régional*

Le programme de maîtrise en développement régional est à caractère multidisciplinaire et s'adresse particulièrement aux détenteurs d'un diplôme de premier cycle en économie, géographie, histoire et sociologie. Les notions de dépendance, de marginalité, de disparités, des modèles de participation et d'implication populaire et des formules originales de développement, comme par exemple celles mises en oeuvre par des organismes de développement communautaire, peuvent être analysées en référence à des réalités concrètes dans un environnement socio-géographique où sont insérés professeurs et étudiants.

2) *Département d'océanographie*

Le département offre un programme de deuxième (M.Sc.) et de troisième cycle (Ph.D.) en océanographie dont les projets de recherches découlent des programmes de recherches du département et de l'INRS-Océanologie.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

PROGRAM ACTIVITIES:

A. 1) *Maîtrise en développement régional*

This multidisciplinary program in regional development is designed chiefly for graduates holding a degree in the social sciences, such as economics, geography, history or sociology. Various concepts such as regional dependence, marginality, disparity, as well as models of public involvement and community self-help programs are analyzed with reference to the reality of eastern Quebec.

2) *Département d'océanographie*

The department offers a masters (M.Sc.) and a doctoral program in oceanography. Study projects are derived from the research programs of the department and INRS-Océanologie.

B. EIA Core Program or Streaming? None.

C. Activities Related to EIA: None indicated.

UNIVERSITÉ DU QUÉBEC À TROIS-RIVIÈRES

Location/Endroit: Trois-Rivières (Québec)

Mailing Address/
Adresse: Université du Québec
à Trois-Rivières
Case postale 500
Trois-Rivières (Québec)
G9A 5H7

Telephone/
Téléphone: (819) 376-5011

COURS :

Département de chimie-biologie

ECL 1008 MÉTHODOLOGIE EN ENVIRONNEMENT

Présenter à l'étudiant les différentes problématiques rencontrées dans des études environnementales et étudier à l'aide de méthodologies appropriées ainsi que de techniques pertinentes, les éléments de solution.

DRT 1006 ASPECTS LÉGISLATIFS DE L'ENVIRONNEMENT

DRT 6001 (G) DOCTRINE ET JURISPRUDENCE ENVIRONNEMENTALE

L'objectif du cours est de fournir à l'étudiant une connaissance de la gestion et de l'utilisation des ressources dans leurs aspects juridiques et de leurs influences sur l'environnement. Les aspects doctrinaux suivants sont abordés : la jurisprudence, la doctrine, les institutions, le rôle du scientifique en droit, les cadres juridiques canadien et québécois. Sources du droit, cadre constitutionnel; la rédaction et l'interprétation des lois. Navigabilité et flottabilité des cours d'eau; zonage, études d'impact : protection de l'environnement. Étude de textes de lois et de jurisprudence.

ECL 6004 (G) ÉTUDE D'IMPACT : ANALYSE ET MÉTHODOLOGIE

Ce cours passe en revue les différentes méthodes utilisées pour exécuter les études d'impact sur l'environnement. Chaque méthode fait l'objet d'une analyse et d'une critique pour en faire ressortir les avantages et les inconvénients. Une synthèse en est faite et sert de base à une étude d'impact simulée.

MRN 6001 (G) GESTION DE L'ENVIRONNEMENT

Département des sciences du loisir

SLO 1012 RÉCRÉATION ET MILIEUX NATURELS

RECHERCHE ET TRAVAUX PERSONNELS :

Vaillancourt, G. CHIMIE-BIOLOGIE

Relations entre faune et biotope au sein des écosystèmes fluviaux et estuariens du Saint-Laurent. Élaboration de méthodologies pour l'étude d'impacts.

ACTIVITÉS :

A. 1) *Baccalauréat en biologie*

Le programme veut mettre un accent particulier sur l'aspect pratique des études biologiques. L'étudiant est confronté soit avec l'environnement naturel (option bio-écologie), soit avec l'étude en laboratoire (option biologie expérimentale). Les étudiants apprennent à développer des solutions adéquates dans la gestion de l'environnement et dans l'utilisation rationelle des ressources du milieu.

2) *Certificat de premier cycle en sciences de l'environnement*

Ce programme multidisciplinaire a pour objectifs d'orienter les étudiants vers une conceptualisation de l'environnement, l'acquisition de connaissances de base, et de leur fonctionnement et de leurs interactions. Il s'adresse plus particulièrement à des personnes oeuvrant dans le domaine des sciences de l'environnement. Il est aussi conçu en fonction de personnes désireuses d'accéder à une formation générale.

3) *Maîtrise en sciences de l'environnement*

Ce programme de type recherche a pour but de former des scientifiques aptes à la recherche interdisciplinaire. L'acquisition de l'autonomie scientifique nécessaire aux praticiens de l'environnement est favorisée.

Les principaux champs d'intérêt du programme sont l'étude des écosystèmes aquatiques, palustres et terrestres. Les candidats acquièrent une compétence générale en sciences de l'environnement, mais dans un thème spécifique. Ils peuvent choisir comme thème une étude d'évaluation environnementale.

B. Programme spécifique aux évaluations environnementales?

Dans le programme de maîtrise en sciences de l'environnement, les étudiants peuvent choisir un thème qui inclut un problème d'évaluation environnementale.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

PROGRAM ACTIVITIES:

A. 1) *Baccalauréat en biologie*

This B.Sc. program stresses the practical application of biological studies. Students may choose either the bio-ecological option which emphasizes the study of the natural environment, or the experimental biology option which stresses laboratory work. Students learn the principles of environmental and resource management.

2) *Certificat de premier cycle en sciences de l'environnement*

The purpose of this multidisciplinary B.Sc. program is to teach students the basic principles of the environmental sciences, as well as their interaction. It is for students already involved in the environmental sciences or those seeking a general education in the field.

3) *Maîtrise en sciences de l'environnement*

The objective of this M.Sc. program is to educate scientists in multidisciplinary research. Emphasis is placed on the study of aquatic, marsh or terrestrial ecosystems. Students acquire general competence in the environmental sciences, but must specialize in a particular field, such as environmental assessment.

B. EIA Core Program or Streaming?

If they wish, students may study a problem in EIA as their area of specialization for their M.Sc. in environmental sciences.

C. Activities Related to EIA: None indicated.

UNIVERSITÉ DU QUÉBEC
INSTITUT NATIONAL DE LA RECHERCHE SCIENTIFIQUE — (INRS)

1. *GÉNÉRAL*

Location/Endroit: Sainte-Foy (Québec)

Mailing Address:/ Adresse:
Secrétariat général
Institut national de la recherche scientifique
2700, rue Einstein
Case postale 7500
Sainte-Foy (Québec)
G1V 4C7

Telephone/ Téléphone: (418) 657-2560

L'Institut national de la recherche scientifique (INRS) a été créé au sein de l'Université du Québec. Sa mission est la recherche fondamentale et appliquée ainsi que les études avancées (de deuxième et de troisième cycle). Il s'est constitué en un réseau de huit centres de recherches dont les thèmes représentent des priorités scientifiques québécoises: l'eau, l'océanographie, l'énergie, les géoressources, l'urbanisation, la santé, les télécommunications, et l'éducation. Tous ces centres sont localisés dans des villes où ils peuvent susciter, entre autres, une collaboration avec les milieux de la recherche, qu'ils oeuvrent dans les secteurs universitaire, industriel ou gouvernemental. L'Institut compte 250 membres dont environ 75 professeurs-chercheurs.

2. *INRS-EAU*

Mailing Address/ Adresse:
INRS-Eau
2700, rue Einstein
Case postale 7500
Sainte-Foy (Québec)
G1V 4C7

Telephone/ Téléphone: (418) 657-2560

PROGRAMMES D'ÉTUDES :

L'INRS-Eau décerne une maîtrise en sciences de l'eau (M.Sc.) et un doctorat en sciences de l'eau (Ph.D.).

Le laboratoire se trouve à Ste-Foy, Québec.

COURS :

EAU 7141 (G) ASPECTS JURIDIQUES RELATIFS AU DOMAINE HYDRIQUE

EAU 7142 (G) LA GESTION DE L'EAU ET SON CONTEXTE ÉCONOMIQUE

EAU 7242 (G) ANALYSE DE SYSTÈME DE LA RESSOURCE EAU

PROGRAMMES DE RECHERCHE :

Programme gestion et aménagement de la ressource

Le programme englobe des activités de recherche sur l'analyse des politiques de l'eau et sur le développement d'une meilleure compréhension du processus gestionnaire. Les activités de recherche regroupent les sujets suivants: mise au point et utilisation de modèles conduisant à l'aménagement optimal de la ressource, comme l'analyse décisionnelle et l'analyse de système; développement et usage de modèles prévisionnels, telle l'analyse prospective; élaboration de méthodes d'évaluation des impacts environnementaux de projets d'aménagement; étude du processus de gestion de l'eau et, notamment, développement d'un cadre méthodologique pour la gestion efficiente.

Programme dynamique chimique et biologie du milieu aquatique

L'étude d'écosystèmes aquatiques et les répercussions de certaines perturbations d'origine anthropique.

Programme hydrologie

L'étude des phénomènes hydrologiques et le développement d'outils d'estimation, d'analyse, de simulation et de prévision de phénomènes hydrologiques et météorologiques.

RECHERCHE ET TRAVAUX PERSONNELS :

Couillard, D. — L'évaluation de la performance des systèmes de traitement en regard des exigences de bassin.

Couture, P. — Élaboration des indices de la qualité du milieu et des méthodes pour mesurer l'impact des substances d'origine anthropique sur les écosystèmes aquatiques.

Sasseville, J.L. (297) — Étude des besoins en information pour la gestion publique du risque. Étude du processus de gestion publique de l'eau. Développement d'objectifs de contrôle de la pollution. Analyse d'utilité des systèmes d'information pour la solution des problèmes d'environnement.

Villeneuve, J.P.	Développement d'un modèle rivière-aménagement pour l'évaluation des répercussions des choix d'aménagement; modèle analytique normatif et optimal du système eau-rivière-intervention. Étude de la vulnérabilité des eaux souterraines à l'usage des pesticides.

3. *INRS-OCÉANOLOGIE*

Mailing Address/ Adresse:	INRS-Océanologie 310, avenue des Ursulines Rimouski (Québec) G5L 3A1
Telephone/ Téléphone:	(418) 724-1651

PROGRAMME D'ÉTUDES :

INRS-Océanologie et l'Université du Québec à Rimouski (UQAR) développent conjointement le domaine de l'enseignement et de la recherche en océanographie. L'UQAR est responsable des programmes d'enseignement et de la recherche fondamentale tandis que l'INRS-Océanologie développe des programmes de recherche orientée et appliquée. Le laboratoire se trouve à Rimouski, Québec.

PROGRAMMES DE RECHERCHE :

Le milieu physique côtier

Les chercheurs se préoccupent de l'étude des processus littoraux par des projets de recherche relatifs à la dynamique sédimentaire littorale et, surtout, à l'hydrodynamique côtière. Ils s'intéressent aussi aux aménagements côtiers : leur étude concerne les impacts de ces aménagements côtiers et le développement de modèles de prévision d'impact de ces mêmes aménagements.

Les processus biologiques et biochimiques des écosystèmes marins et la recherche halieutique

RECHERCHE ET TRAVAUX PERSONNELS :

Drapeau, G.	Études d'impact

4. *INRS-URBANISATION*

Mailing Address/ Adresse:	INRS-Urbanisation 3465, rue Durocher Montréal (Québec) H2X 2C6
Telephone/ Téléphone:	(514) 842-4191

PROGRAMME D'ÉTUDES :

L'INRS-Urbanisation offre un programme de maîtrise en analyse et gestion urbaines, en collaboration avec l'Université du Québec à Montréal (études urbaines) et l'École Nationale d'Administration Publique.

COURS :

URB 7006	ANALYSE ET GESTION DE L'ENVIRONNEMENT (UQAM)

PROGRAMMES DE RECHERCHE :

Les modèles d'impact économique et social occupent une place importante dans le cadre des programmes de recherche traitant de l'espace urbain et régional. Des travaux récents ont, à titre d'exemple, porté sur l'impact du zonage agricole, l'impact économique des arrosages chimiques/biologiques en milieu forestier; l'analyse économique d'une centrale électrique, l'aménagement des espaces verts.

PROGRAM ACTIVITIES :

1) *INRS-GÉNÉRAL*

L'Institut national de la recherche scientifique (INRS) is part of the Université du Québec. It was created to carry out basic and applied research, as well as to provide study programs which lead to post-graduate degrees (i.e. masters and doctorates). INRS consists of a network of eight research centres, each specializing in work considered to be of special importance to the province: water, oceanography, energy, georesources, urbanization, health, telecommunications and education. Each centre is located in a city where researchers from universities, industry and government can best collaborate. The institute has 250 members, including about 75 research professors.

2) *INRS-EAU*

INRS-Eau offers both an M.Sc. and a Ph.D. degree in the science of water. Its laboratory is situated in Ste-Foy, Quebec. INRS-Eau has three core programs:

— *Water resources management* — a study of water, its use and management implications; EIA methodology and water; design of models for water's best use and management.

— *Chemical and biological dynamics of the aquatic environment* — aquatic ecosystems and man-made perturbations.

— *Hydrology*

3) *INRS-OCÉANOLOGIE*

The laboratory of INRS-Océanologie is located at Rimouski. It collaborates in research and graduate studies, chiefly with the Université du Québec à Rimouski. Research programs include coastal zone management and aquaculture.

4) *INRS-URBANISATION*

INRS-Urbanisation offers a Master's program in urban analysis and management, in cooperation with the Université du Québec à Montréal (urban studies) and the École Nationale d'Administration Publique. Economic and social impact models are a significant part of the research programs concerning urban and regional space.

QUEEN'S UNIVERSITY

Location/Endroit: Kingston, Ontario

Mailing Address/ Adresse: Queen's University
Kingston, Ontario
K7L 3N6

Telephone/ Téléphone: (613) 547-5511

TEACHING:

School of Urban and Regional Planning

SURP 817 (G) ENVIRONMENTAL PLANNING LAW AND ADMINISTRATION

The course examines some of the policy issues related to planning the environment and the legal processes by which competing demands upon the environment are resolved and environmental objectives are realized. The preparation of environmental impact statements and other methods of environmental regulation will be considered. Instructor: R.W. Mackenzie.

SURP 871 (G) SOCIAL PLANNING

Concepts of planning theory applied to the selection of social goals by the public authority, and the setting of targets for their achievement; the application of social values and action criteria to the assessment of programs undertaken in pursuit of economic or political goals; use of SIA methodology in case studies; optimizing payoffs from expenditures on social services. Instructor: M.A. Qadeer.

Department of Civil Engineering

CIVL 282 (2) ENVIRONMENTAL ENGINEERING 1

Students are first instructed at a descriptive level upon the technologies of organic chemistry notation, fuels, air pollution, water pollution, solid waste and atomic energy. Some time is then spent indicating the process of decision-making on environmental issues with impact assessments and hearings. The effects of politics, law, economics, sociology and the influences of the media and pressure groups upon any decision are also discussed. Instructor: J.D. Boadway.

Department of Geography

38.306 (3) ARCTIC ENVIRONMENTS

38.319 (3) WASTE DISPOSAL AND LAND RECLAMATION

Instructor: G.K. Rutherford.

Department of Biology

12.300 (3) GENERAL ECOLOGY

The chief aim of the module is to integrate ecological knowledge with knowledge of legal and regulatory processes.

12.950 (G) DECISIONS FOR THE GREAT LAKES

Instructors: A. Crowder and D. Turpin.

Department of Economics

ECON 390 (3) NATURAL RESOURCE ECONOMICS

ECON 890 (G) NATURAL RESOURCE ECONOMICS

INDIVIDUAL RESEARCH AND WORK:

Crowder, A. (72) BIOLOGY

Public perception and carrying capacity; screening regular parks' actions to determine which need environmental review; determining environmental indices.

Gilbert, R. (145) GEOGRAPHY

Research for Petro-Canada on littoral environments of the coast of Cumberland Peninsula (Baffin Island); environmental studies.

Harmsen, R. (168)	BIOLOGY Development of community indices for use in environmental impact studies and assessment for ecological reserves, to replace the less effective older system of indicator species; equilibrium theory in natural and man-made ecosystems, including arctic tundra systems and tropical rainforests. The effects of pesticide applications on biological community complexity and stability.
McCaughey, J.H.	GEOGRAPHY Impact of logging as it affects surface climate (Petawawa study); environmental assessment of the impact of the development of hybrid willow stands (Newfoundland).
Rutherford, G.K.	GEOGRAPHY EIA as it relates to mineral development; environmental monitoring and land reclamation of mine sites.

PROGRAM ACTIVITIES:

A. 1) *School of Urban and Regional Planning*

Current research is focussed on such topics as revitalization of small towns, urban land markets, techniques of environmental impact assessment, patterns of northern towns, policy analysis techniques, and social impact assessment.

2) *Department of Geography*

EIA is considered primarily as it relates to pedological, geomorphological and climatological processes. Research is currently being conducted in the Canadian West, Northern Ontario, Newfoundland and the Canadian Arctic.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA:

The School of Urban and Regional Planning has been involved in seminars and workshops on topics related to EIA.

ACTIVITÉS :

A. 1) *School of Urban and Regional Planning*

Les travaux de recherche actuels portent sur des sujets tels que la revitalisation des petites villes, le marché des terres urbaines, les diverses techniques d'évaluation des incidences environnementales pour les villes des territoires nordiques, les méthodes d'analyse des politiques et les évaluations des impacts sociaux.

2) *Department of Geography*

Les incidences environnementales sont évaluées principalement sous les rapports des processus pédologiques, géomorphologiques et climatologiques. On réalise actuellement des recherches sur l'ouest du Canada, le nord de l'Ontario, Terre-Neuve et l'Arctique canadien.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales :

Le School of Urban and Regional Planning a participé à l'organisation de séminaires et d'ateliers sur des sujets relatifs à l'évaluation environnementale.

THE UNIVERSITY OF REGINA

Location/Endroit: Regina, Saskatchewan

Mailing Address/ Adresse: The University of Regina
Regina, Saskatchewan
S4S 0A2

Telephone/ Téléphone: (306) 584-4111

TEACHING:

Faculty of Engineering

ENGIN 320 (3) INDUSTRIAL IMPACT AND REGULATION

A study of the impacts of industrial facilities, including air and water pollution, solid wastes and noise. The regulation of industrial impacts is discussed. Industrial siting factors are explained. Instructor: F.A. Curtis.

ENGIN 421 (4) ENVIRONMENTAL DESIGN AND IMPACT

Legal, administrative and planning considerations for environmental assessment and methods for preparing an environmental impact statement. Canadian and international approaches are compared. Mitigation measures and engineering design implications are discussed using EIS's for projects being planned. Instructor: F.A. Curtis.

Department of Geography

GEOG 356 (3) GEOGRAPHY OF OUTDOOR RECREATION

Instructor: A. Paul.

GEOG 826 (G) NATURAL RESOURCES MANAGEMENT

Ecological, economic, social/behavioural and institutional/decision-making dimensions of resource management are discussed, including environmental assessment and planning techniques. Instructor: D.A. Gauthier.

Faculty of Social Work

SW 476 (4) RURAL PLANNING AND DEVELOPMENT

This course deals with methods of assessment of rural communities, community organizations and elements that influence decision-making, rural government legislation, public services and funding. It examines the impact of urban development on rural areas through case studies.

INDIVIDUAL RESEARCH AND WORK:

Curtis, F.A. (73, 74, 75, 76, 77, 78, 79, 80, 81, 82) — FACULTY OF ENGINEERING

Development of EIA methods for local private projects (e.g., shopping centres, residential/commercial development) and public projects (e.g., solid waste sites, heavy oil upgraders, rail relocation).

Harding, J. (166, 167) — SCHOOL OF HUMAN JUSTICE

SIA research in northern Saskatchewan, funded by the Social Sciences and Humanities Research Council of Canada, to model the views of interest groups on the impacts of uranium mining through a content analysis of transcripts from the Cluff Lake and/or Key Lake boards of inquiry (1984-1985).

Ralph, D. — FACULTY OF SOCIAL WORK

SIA research in northern Saskatchewan; social impact of development in forestry and uranium mining on northern native people; alternative community-based economic development strategies.

PROGRAM ACTIVITIES:

A. 1) *School of Human Justice/Prairie Justice Research*

Research undertaken by the School stresses social impact assessment issues as one of the main priorities. In particular, study focusses on the interaction between indigenous people, and environmental and social impact assessment.

2) *Faculty of Engineering*

EIA is approached from the perspective of the design and impact of public projects and industrial facilities. The courses which are offered are at the undergraduate level.

3) *Canadian Plains Research Center*

The Center serves as a resource for research and teaching activities concerning Canadian Plains. It publishes research findings and sponsors research projects, seminars, lectures and workshops, and is the base for the CANPLAINS Research Inventory.

The CANPLAINS Data Base contains over 22,000 records of research and publications. Its capabilities include:

a) lists of researchers working in specific subject areas;
b) directories of research on specific topics;
c) lists of funded research;
d) indexing of books, government documents, reports, conference proceedings and over 120 journals containing references to prairie-relevant material; and
e) lists of prairie-related theses.

The Center also publishes a newsletter, "Canadian Plains Bulletin", which promotes a research network, and a semi-annual scholarly journal, *Prairie Forum*.

4) *Faculty of Social Work, Social Administration Research Unit*

The specific research focus of the Social Administration Research Unit is in four substantive areas, one of which is rural and northern studies. Types of studies include social impact studies; baseline statistical research using census, health, education, labour and other data; conceptual research to find, correlate and develop theoretical materials which can serve to clarify rural issues, to analyze data, and to enhance explanatory and predictive ability; and participant-observer research and action research by residents, since many insights into rural issues are denied those who do not live in the locale under consideration.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. 1) *School of Human Justice/Prairie Justice Research*

Les recherches entreprises à l'école font ressortir l'aspect prioritaire de l'évaluation des incidences sociales. On étudie en particulier l'interaction entre les autochtones et l'évaluation environnementale et sociale.

2) *Faculty of Engineering*

On y étudie les évaluations environnementales du point de vue de la conception et des incidences des projets publics et des installations industrielles. Les cours sont donnés à l'intention des étudiants non diplômés.

3) *Canadian Plains Research Center*

Le centre s'occupe des activités de recherche et d'enseignement qui ont trait aux plaines du Canada. Il commandite des projets de recherche, des séminaires, des conférences et des ateliers, et il exploite la base de données CANPLAINS. Cette base contient plus de 22 000 enregistrements qui se rapportent à la recherche, dont :

a) des listes de chercheurs qui travaillent dans des domaines particuliers;
b) des répertoires de travaux de recherche sur des sujets particuliers;
c) des listes de travaux de recherche subventionnés;
d) le répertoire des livres, des documents du gouvernement, des rapports, des comptes-rendus de conférences, et au-delà de 120 périodiques incluant des références aux plaines;
e) une liste des thèses relatives aux plaines.

Le centre publie aussi un bulletin intitulé «The Canadian Plains Bulletin» qui favorise l'établissement d'un réseau de recherche, et un périodique semestriel spécialisé, le *Prairie Forum*.

4) *Faculty of Social Work, Social Administration Research Unit*

Les recherches du service de recherche en administration sociale sont axées sur quatre domaines, dont les études sur les milieux ruraux et le Nord. Les études comprennent des études sur les incidences sociales, des recherches statistiques sur les conditions de base fondées sur les données au sujet notamment de la population, du logement, de l'instruction et du travail, des recherches conceptuelles visant à poser et à corréler des bases théoriques d'éclaircissement de questions rurales, d'analyse de données et d'amélioration des potentiels d'explication et de prévision, et des recherches faisant appel à l'observation et à la participation des habitants car il y a bien des aspects des questions rurales que ne peuvent pas comprendre ceux qui n'habitent pas les lieux à l'étude.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

RYERSON POLYTECHNICAL INSTITUTE

Location/Endroit: Toronto, Ontario

Mailing Address/ Adresse: Ryerson Polytechnical Institute
350 Victoria St.
Toronto, Ontario
M5B 2K3

Telephone/ Téléphone: (416) 979-5000

TEACHING:

School of Applied Geography

GEO 506 (3) RECREATIONAL STUDIES I

Instructor: P. Williams.

GEO 604 (3) RESOURCE AND ENVIRONMENTAL LEGISLATION AND DECISION-MAKING

The major theme developed in the course involves the analysis of complex resource and environmental problems. In many cases such problems involve the consideration of a wide variety of data and of a number of objectives. General methods of dealing with such situations are presented and a detailed review of environmental impact assessment is undertaken. Instructor: M. Bardecki.

GEO 606 (3) RECREATIONAL STUDIES II

Instructor: P. Williams.

GEO 702 (4) EXPLORATIONS IN ENVIRONMENTAL ISSUES

Instructors: M. Bardecki, D. Banting.

GEO 709 (4) DEVELOPMENT AND ENVIRONMENTAL LAW

This course reviews the current form and practice of development and environmental law in Canada and Ontario. Emphasis is placed on land use control and the development process, on public welfare statutes for environmental protection, and on the role of administration boards. Instructor: A. Zweig.

School of Urban and Regional Planning

UPN 300 (3) THEORIES IN REGIONAL PLANNING

Environmental planning movements and methods are reviewed for their application to Canadian regional planning. Institutions established to carry out EIA or similar functions are reviewed. Students may select the study of environmental agencies as the subject of their research in this or subsequent courses. Instructors: J. Mars, E. Samery.

UPN 410 (4) PLANNING ANALYSIS II

Instructor: J. Mars.

UPN 841 (4) ENVIRONMENTAL PLANNING AND ASSESSMENT

This course examines the process and intent of environmental assessment in Ontario. Students are asked to examine the theoretical and methodological issues of environmental assessment and are required to participate in creating an environmental assessment for an existing proposal in the Metropolitan region. Instructor: R. Pushchak.

INDIVIDUAL RESEARCH AND WORK:

Banting, D. GEOGRAPHY

Conservation Authority data base management.

Bardecki, M. GEOGRAPHY

Environmental impacts of agricultural land drainage in southern Ontario; waste water/storm water management and land development.

Duerden, F. GEOGRAPHY

Land use; impacts of Indian land claims.

Jacobs, H. GEOGRAPHY

Electric facilities site selection.

Keeble, R.	URBAN AND REGIONAL PLANNING Survey analysis of residents' reaction to waste management facility.
Mars, J.	URBAN AND REGIONAL PLANNING Statistical analysis of risk measures for waste management facility location.
Morgan, C.	GEOGRAPHY Soil-water erosion and conservation assessment.
Pushchak, R. (279, 280, 281)	URBAN AND REGIONAL PLANNING Environmental impact assessment; risk assessment; siting of risk-generating facilities.
Williams, P.	GEOGRAPHY Economic and social impacts of ski area developments.

PROGRAM ACTIVITIES:

A. 1) *School of Applied Geography*

The program of Environmental and Resources Management offered by the department emphasizes the study of management and planning policies that address conflicts arising as economic development severely reduces the physical resource base and strains the quality of the natural environment. Students must intern to gain practical experience. EIA is also studied as it relates to recreational resources development.

2) *School of Urban and Regional Planning*

The program considers EIA, planning, and the importance of public involvement within this process. Regional environmental institutions receive thorough attention.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. 1) *School of Applied Geography*

Le programme de gestion de l'environnement et des ressources offert par ce département met l'accent sur l'étude des politiques en matière de gestion et de planification se rapportant aux conflits qui naissent lorsque le développement économique réduit considérablement les ressources physiques et diminue la qualité de l'environnement naturel. Les étudiants doivent faire un stage pour acquérir une expérience pratique. On étudie aussi l'évaluation environnementale dans le domaine de la mise en valeur des ressources qui servent aux loisirs.

2) *School of Urban and Regional Planning*

Le programme traite de l'évaluation environnementale du point de vue de la planification et de l'importance de l'engagement du public dans ce processus. Les institutions environnementales régionales reçoivent une attention particulière.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

SAINT MARY'S UNIVERSITY

Location/Endroit: Halifax, Nova Scotia

Mailing Address/ Adresse: St. Mary's University
Halifax, Nova Scotia
B3H 3C3

Telephone/ Téléphone: (902) 429-9780

TEACHING:

Departments of Anthropology and Geography

ANT 319 / GPY 319 (2) CULTURAL ECOLOGY

Instructor: B. Robinson

Department of Geography

GPY 404 (3) COASTAL ZONE MANAGEMENT

Instructor: P. Ricketts.

Atlantic Canada Studies

ACS 630 (G) SEMINAR ON ATLANTIC CANADA ECOLOGY AND RESOURCES

Department of Sociology

SOC 310.0 (2) SOCIETY AND THE ENVIRONMENT

This course will be an examination of selected Nova Scotia environmental issues: acid rain, forestry/wildlife, toxic wastes, and uranium exploration and mining, from an ecological perspective. The class will address the basic question: Can environmental problems be resolved within our society? Students will be expected to analyze critically the perspectives of the provincial and federal governments, industry and environmental organizations. Instructor: M. Clow.

SOC 351 SPECIAL TOPICS IN RESOURCE EXPLOITATION AND ENVIRONMENT

SOC 372.1 (2) SOCIAL IMPACT ANALYSIS

This course is designed to provide the student with an introduction to social impact analysis, in particular the effect of large-scale development projects and government projects on society. As such it covers the design of analytical frameworks, the application of appropriate research methodologies and the development of social impact models.

INDIVIDUAL RESEARCH AND WORK:

Ricketts, P. (287) GEOGRAPHY

Bay of Fundy/Gulf of Maine/Georges Bank (FMG) Atlas — a resource and environmental atlas of the FMG Marine Region, currently being undertaken in co-operation with Dalhousie University (Institute for Resource and Environmental Studies); shoreline erosion and human impact; area-wide assessment and regional implications of environmental impact assessment; Editor: *Studies in Marine and Coastal Geography*.

PROGRAM ACTIVITIES:

A. None indicated.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. Aucune.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

UNIVERSITY OF SASKATCHEWAN

Location/Endroit: Saskatoon, Saskatchewan

Mailing Address/ Adresse: The University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

Telephone/ Téléphone: (306) 244-4343

TEACHING:

Department of Geography

GEOG 280.3 (3) INTRODUCTION TO RESOURCE GEOGRAPHY

GEOG 381.3 (3) GEOGRAPHY OF NORTHERN DEVELOPMENT

This course explores the question of development in northern Canada. The framework for this geographical analysis is provided by the Core/Hinterland Theory. Within this theoretical framework, major resource development will be examined and the regional impact analyzed. Special attention will be placed upon resource development conflicts. Instructor: B. Bone.

GEOG 435.3 (4) PROBLEMS IN GEOMORPHOLOGY

Instructor: L.W. Beaven.

GEOG 847.3 (G) GEOGRAPHY OF NORTHERN DEVELOPMENT

Instructor: R. Bone.

College of Law

LAW 444.3 (4) ENVIRONMENTAL LAW

The course examines processes by which competing demands upon the environment are reconciled and environmental objectives realized. Existing legal techniques to combat environmental degradation will be examined, including common law remedies and various models of environmental legislation. A series of particular problems arising in the area of environmental control will be studied to assess the success of these existing mechanisms and proposals for new directions in the field will be considered. Instructor: M.A. Bowden.

Department of Civil Engineering

CE 456.2 (4) ENVIRONMENTAL CONTROL ENGINEERING

Quality changes occurring in the natural environment and those resulting from man's activities in developing water for domestic, industrial and irrigation use are outlined. Interbasin and international water transport schemes are detailed. The environmental changes associated with extraction of minerals and of power generation are developed. Environmental impact assessment procedures are studied in relation to the above activities. The engineering and environmental impact of future alternative energy sources are discussed as time and interest in specific topics allow. Instructor: E. Davis.

Department of Crop Science and Plant Ecology

PLEC 213.3 (2) PRINCIPLES OF ECOLOGY

Principles of ecology are examined in relation to man's use of ecosystems for food, fibre and shelter. Emphasis is placed on energy flow and cycling of materials in relation to productivity. EIA is introduced through the use of case studies examining such topics as the potash industry. Instructor: R.E. Redmann.

Department of Sociology

SOC 308 (3) COMMUNITY DEVELOPMENT IN CANADA

INDIVIDUAL RESEARCH AND WORK:

Archibold, W. GEOGRAPHY

Environmental impact of heavy metals from uranium tailings.

Beaven, L.W. — GEOGRAPHY

Inventory and assessment of the hillslope and fluvial system impacts created by episodic mass wasting on the steep slope forest lands of the Queen Charlotte Islands of British Columbia.

Bone, R.M. (26, 27, 28, 29, 30, 152, 153, 154, 155, 156) — GEOGRAPHY

Design, development and implementation of a database and monitoring system for the Norman Wells oil development and pipeline project for the Department of Indian Affairs and Northern Development.

Bowden, M.A. (39, 40, 81) — COLLEGE OF LAW

Text/workbook on environmental impact assessment (with F.A. Curtis, University of Regina); environmental assessment legislation; environmental degradation; offshore rights and environmental assessment.

Redmann, R.E. (292) — CROP SCIENCE AND PLANT ECOLOGY

Environmental impact of airborne salts from potash refineries.

PROGRAM ACTIVITIES:

A. 1) *College of Law*

Environmental and social assessment are examined as they relate to the regulation of pollution or resources development. Also of interest are public participation and the hearings process, and the various legislative and non-legislative procedures that are the underpinnings of EIA across the country.

2) *Department of Geography*

A major focus of the teaching and research in the department is land use planning. It is in this light that EIA/SIA are primarily studied. Northern development problems are also of interest to some faculty members.

3) *Department of Civil Engineering*

Environmental impact assessment is studied in relation to quality changes that occur in the natural environment as a result of man's activities.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. 1) *College of Law*

On y étudie l'évaluation des incidences environnementales et sociales du point de vue de la réglementation applicable à la pollution ou à l'exploitation des ressources. Comme autres sujets d'étude intéressants, il y a la participation du public et le processus des audiences ainsi que les diverses mesures législatives et autres qui sont la base de l'EIE au pays.

2) *Department of Geography*

La planification de l'utilisation des terres est l'un des principaux sujets d'enseignement et de recherche dans ce département, et c'est surtout sous cet aspect qu'on traite de l'évaluation environnementale et sociale. En outre, certains membres du département s'intéressent aux problèmes de la mise en valeur du Nord.

3) *Department of Civil Engineering*

On étudie l'EIE en rapport avec les changements dans la qualité de l'environnement naturel résultant de l'industrie humaine.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales: Aucunes.

UNIVERSITÉ DE SHERBROOKE

Location/Endroit:	Sherbrooke (Québec)
Mailing Address/ Adresse:	Université de Sherbrooke Sherbrooke (Québec) J1K 2R1
Telephone/ Téléphone:	(819) 821-7000

COURS :

Département de géographie

GEO 406 — IMPACT DE L'HOMME SUR SON MILIEU

Le cours est une initiation à la problématique de l'environnement et veut montrer les effets de l'action de l'homme sur le milieu. Comme le sujet est vaste et complexe, l'approche utilisée consiste à donner d'abord une vue d'ensemble des impacts des diverses activités humaines sur le milieu et en conséquence sur les écosystèmes pour ensuite compléter par l'étude d'un ou plusieurs cas. Coordonnateur : A. Poulin.

GEO 410 — UTILISATION DU SOL ET ENVIRONNEMENT

Il y a trois objectifs du cours : connaissance de l'utilisation du sol et de ses effets sur l'environnement; connaissance des méthodes de préparation des rapports d'impacts sur l'environnement; et intégration du géographe dans un équipe interdisciplinaire. Coordonnateur : A. Poulin. (cours à option de maîtrise en environnement. Voir Activités).

GEO 708 (G) — SÉMINAIRE DE RECHERCHE EN UTILISATION DU SOL ET EN ENVIRONNEMENT

Le séminaire de recherche en utilisation du sol porte sur quatre thèmes: l'évaluation des impacts; l'érosion des sols; aspects visuels et esthétique de l'utilisation du sol; la cartographie de l'environnement. Coordonnateur : A. Poulin.

Département de biologie

ECL 300 — L'ENVIRONNEMENT ET L'HOMME

Coordonnateur : M. Galdes.

PBI 712 (G) — GESTION DE L'ENVIRONNEMENT

Coordonnateur : M. Provencher.

PBI 720 (G) — BIOLOGIE DU MILIEU III

Coordonnateur : J. Juillet.

Faculté des sciences appliquées

SCA 761 (G) — SÉMINAIRES EN ENVIRONNEMENT

Ce cours a pour but de rendre l'étudiant capable d'évaluer les effets d'un projet sur l'environnement et de rédiger des rapports d'impact sur l'environnement. Coordonnateur : M. Beerli.

SCA 762 (G) — DROIT DE L'ENVIRONNEMENT

Historique du droit de l'environnement. Rôle des pouvoirs publics et des ministères. Lois qui régissent les divers organismes. Rôle des particuliers : interventions, recours. Participation des citoyens à l'élaboration des normes régissant la qualité du milieu. Étude comparative de la législation canadienne avec celle de différents pays. Coordonnateur : P. Chatillion.

RECHERCHE ET TRAVAUX PERSONNELS :

Coupal, B.
Thérien, N.
Morrison, K. — GÉNIE CHIMIQUE

Évaluation des effets nocifs de la tordeuse de bourgeons de l'épinette sur la productivité des forêts du Québec.

Poulin, A.
(275, 276) — GÉOGRAPHIE

Les routes et l'environnement.

Royer, A. — CARTEL

Atmosphère (aérosols urbains). Environnement : variation des

paramètres du sol en relation avec le climat.

Thérien, N.
Morrison, K.

GÉNIE CHIMIQUE

Modélisation de la bioaccumulation de métaux lourds dans la chaîne alimentaire aquatique de réservoirs hydro-électriques manuellement créés.

ACTIVITÉS :

A. 1) *Faculté des sciences appliquées*

Les départements de génie chimique et de génie civil offrent une concentration en environnement au niveau du premier cycle.

2) *Maîtrise en environnement*

Le programme de maîtrise en environnement vise à donner à des personnes de formation différente les outils nécessaires à la solution des problèmes reliés à l'environnement. De plus, ce programme leur fait connaître les aspects scientifiques, techniques et légaux de la protection du milieu de vie.

La contribution de différents spécialistes à l'étude des problèmes de l'environnement favorise la participation des étudiants tout en leur donnant une occasion privilégiée de discuter de leurs projets. L'étudiant acquiert aussi une expérience de recherche grâce à un stage effectué soit à l'Université, soit dans une industrie, soit encore au sein d'un organisme gouvernemental. Le stage porte essentiellement sur des problèmes d'intérêt pratique directement reliés à l'environnement. Le projet est réalisé au sein d'une équipe multidisciplinaire (ingénieurs, biologistes, etc.) dans un milieu de travail où il fera éventuellement carrière.

3) *Département de géographie*

Le département fournit aux étudiants les outils de travail nécessaires pour faire les évaluations environnementales. Même si ce n'est pas une specialité, l'évaluation environnementale est examinée à fond dans plusieurs cours.

4) *Centre d'applications et de recherche en télédétection (CARTEL)*

Le centre est né de la fusion de l'Institut d'aménagement et du laboratoire de télédétection du département de géographie. Le nouveau centre est le principal centre universitaire de recherches en télédétection au Québec. Le CARTEL s'oriente vers l'amélioration des méthodes d'analyse et d'interprétation des données de télédétection de même que vers certaines applications de la télédétection p. ex: agriculture, milieu côtier, milieu urbain et environnement.

B. Programme spécifique aux évaluations environnementales?

Le programme de maîtrise en environnement offre aux étudiants la possibilité de participer à un groupe interdisciplinaire d'étude pratique dont le résultat est la production d'une étude d'impact environnemental (cours SCA 761).

C. Activités se rapportant aux évaluations environnementales : Aucunes.

PROGRAM ACTIVITIES:

A. 1) *Faculté des sciences appliquées*

The departments of chemical and civil engineering offer a concentrated program in environmental engineering at the undergraduate level.

2) *Maîtrise en environnement*

The Masters program in environmental studies provides students from various scientific backgrounds with the tools necessary to solve problems related to environmental issues. Further, it introduces them to the scientific, technical and legal aspects of environmental protection. Students are instructed by specialists from a broad range of areas of expertise. They are also required to work on their own individual projects. As part of their program, students receive "hands-on" experience in the university, private industry or government.

3) *Département de géographie*

The department's program provides students with the tools to work in EIA. Although there is no concentration in EIA, it is examined in detail in several courses.

4) *Centre d'applications et de recherche en télédétection (CARTEL)*

This centre was born out of the fusion of the Institut d'aménagement and the remote sensing laboratory of the department of geography. The new centre is the leading remote sensing university research centre in Quebec. CARTEL is concentrating its work on the improvement of remote sensing data analysis and interpretation methods as well as on certain applications of remote sensing, e.g., agriculture, coastal settings, urban settings and the environment as a whole.

B. EIA Core Program or Streaming?

The program leading to a Maîtrise en environnement allows students to participate in a practical interdisciplinary study team which produces an environmental impact statement (course SCA 761).

C. Activities Related to EIA: None indicated.

SIMON FRASER UNIVERSITY

Location/Endroit: Burnaby, British Columbia

Mailing Address/ Adresse: Simon Fraser University
Burnaby, British Columbia
V5A 1S6

Telephone/ Téléphone: (604) 291-3111

TEACHING:

Natural Resources Management Program

MRM 611-5 (G) POPULATION AND COMMUNITY ECOLOGY

A review of population, community, and ecosystem ecology; implications of these areas for methods of resource management and environmental assessment.

MRM 612-5 (G) MANAGEMENT MODELS OF BIOPHYSICAL RESOURCES

Methods of constructing simulation models and their uses in resource management and decision-making. Case studies of environmental modelling with emphasis on biological resources.

MRM 645-5 (G) RESOURCE DEVELOPMENT COMMUNITIES

Examination of the impact of resource development on communities in Canada. The course presents an overview of the social organization of resource-based communities and an analysis of the participatory process in decision-making in resource management.

MRM 646-5 (G) ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Evaluation and application of current methodologies for social, economic and biophysical impact assessment. Instructor: J.C. Day.

MRM 651-5 (G) PROJECT EVALUATION

The course examines the role, limitations, and methods of benefit-cost analysis. Different measurement techniques are applied to the estimation of a range of benefits and costs. Market and non-market allocations are considered. Instructor: J. Richards.

Department of Geography

GEOG 421 (4) GEOGRAPHY OF RESOURCE DEVELOPMENT

Geographical aspects of development and management of natural resources. The course focusses on decision-making and institutions, frameworks, resource allocation technique (e.g., benefit-cost analysis), environmental and social impact assessment. Instructors: M. Barker, S. Wong.

GEOG 383 (3) REGIONAL PLANNING I

GEOG 444 (4) REGIONAL PLANNING II

GEOG 445 (4) RURAL PLANNING

Department of Biological Sciences

BISC 432-3 (4) CHEMICAL PESTICIDES AND THE ENVIRONMENT

BISC 650-3 (G) INDUSTRIAL TOXICOLOGY

BISC 846-3 (G) INSECTICIDE CHEMISTRY AND TOXICOLOGY

INDIVIDUAL RESEARCH AND WORK:

Day, J.C. NATURAL RESOURCES MANAGEMENT PROGRAM

International river basin management; environmental regulation; coastal zone management; landslide hazards; social impact assessment; environmental effects of B.C. Coal Guidelines.

Gunton, T. NATURAL RESOURCES MANAGEMENT PROGRAM

Regional development; impact evaluation of megaprojects; regional resource planning; mineral policy; environmental effects of B.C. Coal Guidelines.

Peterman, R. — NATURAL RESOURCES MANAGEMENT PROGRAM

Simulation modelling of various ecological systems.

Roberts, M.C. — NATURAL RESOURCES MANAGEMENT PROGRAM

Land suitability model for the evaluation of land use change.

PROGRAM ACTIVITIES:

A. 1) *Department of Geography*

Environmental and social impact assessment are addressed from the point of view of land use and land use planning. Courses associated with EIA/SIA are offered at the undergraduate level.

2) *Natural Resources Management Program*

This is a professional program designed for individuals with experience in private organizations or public agencies dealing with resources, and for recent graduates in various disciplines related to natural resources management. All courses are scheduled in the evening from time to time to permit students to complete the program on a part-time basis. EIA and SIA are part of both teaching and research.

B. EIA Core Program or Streaming?

No, although students may follow a line of study specializing in these areas.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. 1) *Department of Geography*

On y étudie l'évaluation des incidences environnementales et sociales du point de vue de l'utilisation des terres et de la planification en ce domaine. Des cours connexes sont offerts aux étudiants non diplômés.

2) *Natural Resources Management Program*

C'est un programme de niveau professionnel à l'intention des personnes qui ont acquis de l'expérience dans des organisations privées ou des organismes publics qui s'occupent des ressources ainsi que pour les récents diplômés dans diverses disciplines se rapportant à la gestion des ressources naturelles. Tous les cours sont donnés le soir de temps à autre pour permettre aux étudiants de suivre le programme à temps partiel. L'évaluation des incidences environnementales et sociales sont des sujets d'enseignement et de recherche.

B. Programme spécifique aux évaluations environnementales?

Non, bien que les étudiants aient la possibilité de suivre des cours menant à une spécialisation dans ce domaine.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

TECHNICAL UNIVERSITY OF NOVA SCOTIA

Location/Endroit: Halifax, Nova Scotia

Mailing Address/
Adresse: Technical University of Nova Scotia
P.O. Box 1000
Halifax, Nova Scotia
B3J 2X4

Telephone/
Téléphone: (902) 429-8300

TEACHING:

Department of Urban and Rural Planning

ARP 0313 (G) ENVIRONMENTAL STUDIES

ARP 1206 (G) RURAL PLANNING

ARP 1530 (G) ENERGY AND PLANNING

The course will combine an examination of inclusion of energy-related factors in day-to-day planning practice with treatment of such special topics as: energy resource development in rural planning, energy accounting in environmental impact assessment and the role of energy in urbanization. Instructor: D. Procos.

ARP 2315 (G) ENVIRONMENT AND TECHNOLOGY

(offered at Dalhousie University)

ARP 2529 (G) NATURAL RESOURCES ADMINISTRATION IN CANADA

(offered at Dalhousie University)

ARP 2426 (G) SOCIAL AND ECONOMIC IMPACT ASSESSMENT

Canada's economic, social and political evolution has been and is characterized by the development of natural resources. This class will introduce the student to the theoretical, legislative and methodological perspectives of socio-economic impact assessment as a planning tool. In particular, the course will draw upon an increasing body of literature relating to the impacts of resource development. Instructor: A.G. Wilkie.

Department of Civil Engineering

CE 5840 (5) POLLUTION CONTROL

Course emphasis is on training civil engineering students to conduct environmental impact assessments as part of a multi-disciplinary team.

INDIVIDUAL RESEARCH AND WORK:

Procos, D. URBAN AND RURAL PLANNING

Survey of impacts from fossil fuel extraction in the Mediterranean Basin; social and economic impact study for Mobil's (Venture Field) EIS.

Waller, D.H.
Hart, W.C.
Thirumurthi, D. CENTRE FOR WATER RESOURCES STUDIES

Halifax Urban Watersheds Program: impacts of urban development on lakes and their watersheds.

Wilkie, A.
(408, 409, 410) URBAN AND REGIONAL PLANNING

Socio-economic impact assessment of offshore energy developments in Scotland and east coast Canada; regional social change and the relevance of megadevelopments as catalysts for social change.

Wilkinson, B. URBAN AND REGIONAL PLANNING

The role of government in the management of hazardous industrial residuals: comparative study of firms ancillary to petroleum development (Master's Research).

PROGRAM ACTIVITIES:

A. *Department of Urban and Regional Planning*

The activities of the Department are centred on a professionally oriented approach to planning. Of particular interest are activities on offshore development.

B. EIA Core Program or Streaming?

No; however, as in other institutions, students may choose this area as an area of specialized study, with the guidance of faculty.

C. Activities Related to EIA: Public lectures and workshops on subjects about EIA/SIA.

ACTIVITÉS :

A. *Department of Urban and Regional Planning*

Les activités du département sont axées sur un aspect de la planification qui débouche sur une profession. On s'intéresse particulièrement à l'exploitation des ressources sous-marines.

B. Programme spécifique aux évaluations environnementales?

Non. Cependant, comme c'est le cas pour d'autres institutions, les étudiants peuvent choisir ce domaine et s'y spécialiser avec l'aide des professeurs.

C. Activités se rapportant aux évaluations environnementales: Conférences publiques et ateliers sur des sujets se rapportant aux évaluations environnementales.

UNIVERSITY OF TORONTO

Location/Endroit: Toronto, Ontario

Mailing Address/ Adresse: The University of Toronto
Toronto, Ontario
M5S 1A1

Telephone/ Téléphone: (416) 978-2190 or 978-2011

TEACHING:

Innis College

INI 220 (2) ENVIRONMENTAL RISK ASSESSMENT

An introduction to risk assessment concepts, methods and technologies, emphasizing the ecological basis of environmental problems and the Canadian socio-political management context. Instructor: A. Whyte.

INI 320 Y (3) CANADIAN ENVIRONMENTAL ISSUES

Instructors: B. Savan and M. Campbell.

INI 420 (4) ENVIRONMENTAL RESEARCH SEMINAR

This course is designed for advanced undergraduate study on selected environmental issues of current relevance, including policy problems related to environmental assessment. Students are encouraged to work as a team although individual projects are also acceptable. This course emphasizes the development of skills necessary to gather, interpret and present information on environmental issues. Instructor: B. Savan.

POL 454/F (4) POLITICS OF THE ENVIRONMENT

Instructor: G. Beakhurst.

Institute for Environmental Studies

ESE 1002 F (G) ENVIRONMENTAL LAW

An introduction to environmental law for students engaged in environmental studies: the legal methods available to resolve environmental problems and the scope and limits of those methods; common law and statutory "tools" as well as environmental assessment legislation, the problem of "standing to sue" and the limits of litigation. Instructor: J. Swaigen.

ESE 1005 F (G) ENVIRONMENTAL MANAGEMENT I

Instructors: P. Byer and A.P. Grima.

ESE 1006 (G) MAN-ENVIRONMENT THEORY II

Concepts and techniques of simulation modelling applied to the adaptive modelling of ecosystems. Instructors: M. Jones and D. Whelpdale.

ESE 1007 F (G) MAN-ENVIRONMENT THEORY I

An analysis of positions taken by contemporary environmental advocates. Statements in the literature and those advanced by visiting speakers are examined to determine which can be supported by a coherent body of evidence and which achieve their effect through polemical means. Course instructors attempt to use logical techniques to further this aim but recognize and extensively discuss the role of aesthetic and other effective components in environmental discourse. Instructors: R.C. Plowright and H.A. Regier.

ESE 1008 S (G) ENVIRONMENTAL MANAGEMENT II

Instructors: P.M. Stokes, P.H. Jones and A.P. Grima.

ESE 1200 S (G) ENVIRONMENTAL ECONOMICS

Instructor: J.A. Donnan.

ESE 1206 S (G) URBAN AND ENVIRONMENTAL SOCIOLOGY: SOCIAL IMPACT OF ENVIRONMENTAL CHANGE

Introduction to approaches and techniques for resolving social

impacts arising from environmental change, SIA, risk perception, public participation, environmental mediation. Instructor: K. Neuman.

ESE 1210 H (G) RISK ANALYSIS AND MANAGEMENT

The course will introduce the concepts of risk analysis and management and their relationship to the environmental field. Methods will be surveyed for analyzing risk in five stages: needs, activities, release, exposure and consequences. The risk management options and their evaluation at each of the five stages will be discussed. Applications will include: hazardous material transportation, hazardous waste management, acid rain, energy systems and industrial development. Projects will be used to provide practical experience. Instructor: J.E. Dooley.

JBE 1434 Y (G) APPLIED ECOLOGY

Instructors: P.M. Stokes, T.C. Hutchinson and M. Havas.

JBE 1435 H (G) TECHNIQUES IN APPLIED ECOLOGY

Instructor: T.C. Hutchinson.

Department of Geography

GGR 332 H (3) ENVIRONMENTAL RISKS AND HAZARDS OF DEVELOPMENT

Studies of the exacerbation of natural and man-made environmental hazards in developing countries. An exploration of the methods of risk assessment and hazard management in an international context.

GGR 1400 S (G) GEOGRAPHIC PERSPECTIVES ON ENVIRONMENTAL MANAGEMENT

Instructor: Staff.

GGR 1411 S (G) HUMAN RESPONSES TO NATURAL AND MAN-MADE ENVIRONMENTAL HAZARDS

Instructor: I. Burton.

GGR 1449 H (G) CURRENT RESEARCH APPROACHES IN ENVIRONMENTAL GEOGRAPHY

Faculty and graduate students present seminars on current research. Instruction in research design and development of a research proposal. Instructors: Staff.

GGR 393 F (4) METHODS OF ENVIRONMENTAL
JPG 1413 F (G) IMPACT ASSESSMENT

Current methods of impact prediction and assessment in bio-physical and socio-economic systems; development of an EIA framework. Instructors: J.B.R. Whitney and V.W. Maclaren.

GGR 416 S (4) FIELD STUDIES IN ENVIRONMEN-
JPG 1419 S (G) TAL ASSESSMENT

The major emphasis of the course is on carrying out an environmental impact assessment. This assessment will be written, and defended in a mock hearing in class. The practical work will be supplemented by a small number of workshops and lectures. Instructors: J.B.R. Whitney and V.W. Maclaren.

Master's Programme in Planning

PLA 1005 F (G) DECISION ANALYSIS

Introduction to concepts and techniques of decision-making in planning. Topics include survey methods, mathematical programming, game theory, bargaining theory, decision analysis, multicriteria evaluation. Instructor: V.W. Maclaren.

PLA 1551 S (G) POLICY ANALYSIS AND IMPACT ASSESSMENT

This course introduces a methodology for policy analysis. Topics include cost-benefit analysis, regional forecasting and urban impact assessment. Instructor: M. Gertler.

PLA 1601 S (G) INTRODUCTION TO ENVIRONMENTAL PLANNING

This course covers a wide variety of topics at the introductory level, including environmental law, resource management, environmental standards, risk assessment, environmental economics, social impact assessment. Instructor: V.W. Maclaren.

Department of Economics

ECO 313S (3) ENVIRONMENTAL ECONOMICS

Sources of air and water pollution, dispersion of pollutants, costs and benefits of pollution control. Examines current regulatory policies and alternatives to those policies. Particular attention is paid to problems of current interest, including acid rain and waterborne effluent from the pulp and paper industry.

INDIVIDUAL RESEARCH AND WORK:

Burton, I. (46, 95, 406, 407) — GEOGRAPHY

Assessment of technological risks and environmental hazards.

Byer, P. (55, 94, 161) — INSTITUTE FOR ENVIRONMENTAL STUDIES/CIVIL ENGINEERING

Policy and project evaluation, risk management and decision-making for waste management, water resources planning and transportation planning.

Dewees, D.N. (89, 90) — ECONOMICS

Research on the differing economic impact of alternative policies for pollution control and their success in reducing environmental impacts; assessment of the risk to the general public and to occupants of buildings from the presence of asbestos.

Dooley, J.E. (55, 91, 92, 93, 94, 95, 96) — FACULTY OF MANAGEMENT STUDIES

Research on systems for risk analysis and management with particular emphasis on developing countries in S.E. Asia. Risk profiles and allocation of resources to risk management activities.

Grima, A.P. (131, 158, 159, 160, 161) — INSTITUTE FOR ENVIRONMENTAL STUDIES/GEOGRAPHY

EIA and risk assessment; institutional mechanisms in mitigating environmental impacts; role of public participation in EIA/SIA; environmental mediation and community compensation.

Hutchinson, T.C. — INSTITUTE FOR ENVIRONMENTAL STUDIES/BOTANY

Research on economic effects of acid precipitation and heavy metals, heavy metals pollution in the boreal forest and causes of sugar maple decline, and effects of oil spills in the Canadian Arctic.

Jaakson, R. (179) — GEOGRAPHY

Social survey methods in EIA; recreation and tourism impact assessment.

Jones, P.H. — INSTITUTE FOR ENVIRONMENTAL STUDIES

UNDP/WHO Project on Environmental Impact System, 1979-1981; EIA and corrective measures; WNDP/WHO Greece Project on physical planning in the environment including oil exploration, extraction, and transportation in the offshore areas of Greece and Crete, 1974-1982; project impact management.

Mackay, D. — CHEMICAL ENGINEERING

Research on environmental behaviour and effects of organic pollutants, especially hydrocarbons; technical advisor on oil spills in cold climates to Beaufort Sea Environmental Assessment Panel.

Maclaren, V.W. (203, 204, 205, 206, 207, 208, 403, 404) — GEOGRAPHY

Decision-making and conflict resolution; environmental assessment of energy-from-waste facilities; multi-criteria evaluation methodologies.

Regier, H.A. (131, 286) — INSTITUTE FOR ENVIRONMENTAL STUDIES/ZOOLOGY

Advisor to Electric Power Research (Palo Alto, California) on impacts of entrainment and impingement of fish in thermoelectric generating plants; recently completed 20-year study on the impact of the Bruce Nuclear Complex on local fish population.

Savan, B. — INNIS COLLEGE

Implementation of Ontario's *Environmental Assessment Act*; influence of values and attitudes on environmental research findings.

Stokes, P.M. — INSTITUTE FOR ENVIRONMENTAL STUDIES/BOTANY

Reclamation studies on metal and acid contaminated industrial sites; environmental monitoring for metals and organics under the influence of LRTAP.

Wellman, B. (392) — CENTRE FOR URBAN AND COMMUNITY STUDIES

Network analysis; social impact assessment; technology assessment; project evaluation.

Whitney, J.B.R. (207, 208, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405) — GEOGRAPHY

Project "Ecoville"; environmental assessment procedures; EIA and foreign aid; EIA in developing countries; Chairman, Impact Assessment Panel, Joint Conference of Canadian and Chinese Geographers.

Whyte, A.V. (406, 407) — INSTITUTE FOR ENVIRONMENTAL STUDIES

Role of flood risk maps on local assessment of flood risk in Oshawa Area, perception of climatic risks in Canada, study into selected aspects of the emergency caused by the Mississauga train derailment (with I. Burton and P. Victor) for the Solicitor General of Ontario.

PROGRAM ACTIVITIES:

A. 1) *Institute for Environmental Studies*

The Institute is a centre for interdisciplinary research and study which offers association with a wide range of academics in the natural and social sciences. Its primary goal is to provide facilities and academic climate for problem-oriented research to those who wish to maintain their discipline-based academic work. The Institute specializes in research on: the quality of the environment, environmental toxicology, environmental and resource management, environmental impact assessment and risk assessment. Students of the Institute may work towards either a Master of Arts or a Master of Science.

2) *Master's Program in Planning*

The program assists students in understanding the mandate, goals and instruments of planning agencies at all levels of the public sector, while providing the skills required for a professional career in one of several areas of planning specialization. Environmental assessment is approached from the direction of environmental planning.

3) *Department of Geography*

a) Environmental and Biophysical Systems — These branches of geography are concerned with description and analysis of the physical, chemical and biological processes that condition the environment, and with interactions between these processes and humans (considered individually or socially). One option of study in this area is environmental assessment. Students concentrate on the measurement, analysis, conceptualization and understanding of biophysical, socio-economic and built systems so as to be able to attempt to predict how each will change in response to new impacts.

b) Environmental Management and Environmental Assessment — These components of geography are highly eclectic. Students concentrating in this area take both physical and human geography courses, attempting to build an understanding of not only the physical and human approaches themselves, but also the many interactions between them.

4) *Innis College Environmental Studies Program*

Innis College provides a program at the undergraduate level in environmental studies. One of the topics addressed is environmental assessment.

B. EIA Core Program or Streaming?

Yes. At the undergraduate level, the core program is offered in the Department of Geography. At the graduate level, the core program is offered in the Institute for Environmental Studies and the Master's Program in Planning.

C. Activities Related to EIA:

1) The Institute for Environmental Studies organizes workshops and seminars on topics related to EIA. Recent activities have included:

a) A workshop on Risk Assessment and EIA, April, 1985.

b) A report to CEARC on "Research Needs and Opportunities in the Application of Risk Assessment to EIA", January, 1986.

c) A workshop on Information Needs for Risk Assessment, September, 1985.

2) Professor Dooley of the Faculty of Management Studies has been involved since 1984 in a program, as part of the Environmental Management Development in Indonesia project (CIDA), to do research and teaching on the use of risk analysis in environmental management.

ACTIVITÉS :

A. 1) *Institute for Environmental Studies*

L'institut est un centre interdisciplinaire de recherche et d'études qui offre une gamme considérable de cours généraux en sciences naturelles et sociales. Il a pour but principal de fournir aux personnes qui désirent continuer de travailler dans leur discipline les ressources et le climat d'études nécessaires à la recherche orientée vers les problèmes. Il se spécialise dans la recherche sur la qualité de l'environnement, la toxicité environnementale, la gestion de l'environnement, l'évaluation des incidences environnementales et l'évaluation des risques. Les étudiants peuvent y obtenir une maîtrise ès Arts ou en Sciences.

2) *Master's Program in Planning*

Le programme aide les étudiants à comprendre le mandat, les buts et les moyens d'action des organismes de planification à tous les niveaux du secteur public tout en leur permettant d'acquérir les aptitudes nécessaires pour exercer une profession dans l'un des domaines de spécialisation en planification. On y étudie l'évaluation des incidences environnementales du point de vue de la planification de l'environnement.

3) *Department of Geography*

a) Systèmes écologiques et biophysiques — Ces branches de la géographie traitent de la description et de l'analyse des processus physiques, chimiques et biologiques qui conditionnent l'environnement et des interactions de ces processus et de l'homme (du point de vue individuel ou social). Ce domaine d'étude comporte une option en évaluation environnementale. Les étudiants concentrent leurs efforts sur la mesure, l'analyse et la compréhension des systèmes biophysiques, socio-économiques et construits, afin d'essayer de prévoir de quelle façon chacun d'eux changera sous l'effet de nouveaux impacts.

b) Gestion de l'environnement et évaluation environnementale — Ces branches de la géographie sont très éclectiques. Les étudiants qui se spécialisent dans ce domaine suivent des cours de géographie physique et humaine pour essayer de comprendre non seulement les aspects physiques et humains mais aussi leurs nombreuses interactions.

4) *Innis College Environmental Studies Program*

Le collège Innis offre aux étudiants non diplômés un programme d'études environnementales qui porte entre autres sur l'évaluation environnementale.

B. Programme spécifique aux évaluations environnementales?

Pour les étudiants non diplômés, le programme est offert au département de géographie, et, pour les étudiants diplômés, à l'Institute for Environmental Studies; il existe aussi, pour ces derniers, un programme de maîtrise en planification.

C. Activités se rapportant aux évaluations environnementales :

1) L'Institute for Environmental Studies organise des ateliers et des séminaires sur des sujets se rapportant à l'évaluation environnementale. À signaler :

a) Un atelier sur l'évaluation des risques et l'évaluation des incidences environnementales, qui a eu lieu en avril 1985.

b) La publication, en janvier 1986, d'un rapport destiné au CCREE sur les besoins en recherche et les possibilités en matière d'application de l'évaluation des risques à l'évaluation des incidences environnementales.

c) Un atelier sur l'information nécessaire à l'évaluation des risques, tenu en septembre 1985.

2) Le professeur Dooley, de la Faculty of Management Studies, réalise des recherches et enseigne depuis 1984 au sujet de l'emploi de l'analyse des risques dans la gestion de l'environnement, dans le cadre du programme de l'ACDI qui a pour but la mise au point de la gestion de l'environnement en Indonésie.

TRENT UNIVERSITY

Location/Endroit: Peterborough, Ontario

Mailing Address/ Adresse: Trent University
Peterborough, Ontario
K9J 7B8

Telephone/ Téléphone: (705) 748-1215

TEACHING:

Canadian Studies/Environmental and Resources Studies

CS 310 (3) PUBLIC POLICY AND THE CANADIAN ENVIRONMENT

Current issues in Canadian public policy relating to resource management, conservation, population and pollution control, approached in the context of world environmental and resource problems. Instructor: R.C. Paehlke.

Environmental and Resource Studies Program

ERS 250 (2) CANADIAN NATURAL RESOURCE THEORY AND MANAGEMENT

Instructors: T. Whillans and R. Page.

ERS 300-301 (3) RESEARCH TOPICS

A research course in which small groups of students follow a specific project with a faculty member. Emphasis is on projects that involve some interaction between natural and social sciences such as environmental impact assessment. Instructor: Staff.

ERS 330 (3) ENVIRONMENTAL ETHICS

Instructor: L. Rubinoff.

ERS GEOG 333b (3) WILDERNESS RESOURCES

An examination of the history, use, planning and management of wilderness resources, with an emphasis on Canada, including environmental impact assessment procedures in national and provincial parks and wilderness areas. Instructor: J.S. Marsh.

ERS 340 (3) NORTHERN DEVELOPMENT: A CASE STUDY IN NORTHERN ENVIRONMENTAL IMPACT ASSESSMENT

This course looks at the biological, geotechnical, geophysical, social and economic components in the EIA of major northern projects (principally oil and gas). Instructor: R. Page.

ERS 380 (3) NATURAL RESOURCE ECONOMICS

Instructor: T. Drewes.

ERS 390 (3) ENVIRONMENTAL TOXICOLOGY

Instructor: C. Metcalfe.

ERS 403a/402b (4) CONCEPTS IN WATER POLLUTION

INDIVIDUAL RESEARCH AND WORK:

Bowles, R.T. (42, 43, 44) SOCIOLOGY

Social impact assessment in small communities; community level SIA; impact of major developments on families and households.

Evans, R.D. ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM

Assessment of development impacts on chemical status of lakes.

Lockhart, A. SOCIOLOGY

Socio-economic impact model for northern development.

Marsh, J.S. (211) GEOGRAPHY

Environmental impact assessment; history, planning and management of parks and wilderness resources; impacts of tourism, especially in alpine and northern areas.

Metcalfe, C.D.	ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM Aquatic toxicology, including fate, lethality and carcinogenicity of chemicals to aquatic biota.
Paehlke, R.	ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM Conserver Society; politics of resource development; EIA and energy planning; teaching of environmental studies; technology assessment; environmentalism and ideology; impact of science and technology on society.
Page, R.	ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM Environmental assessment of energy development; northern development and assessment; energy policy; text on environmental and resource development in the 1970s.
Schrecker, T.F.	ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM Toxic substances; environmental economics; environmental policy and law; occupational health and safety.
Torgerson, D. (364, 365, 366)	ADMINISTRATIVE AND POLICY STUDIES Social impact assessment; co-editor of *Alternatives: Perspectives on Society, Technology and Environment*.
Whillans, T.H.	ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM Aquatic ecology; fisheries; assessment of long-term environmental impacts; ecosystem rehabilitation.

PROGRAM ACTIVITIES:

A. 1) *Environmental and Resource Studies Program*

This is an interdisciplinary undergraduate program which includes formal instruction in EIA. It offers a pass and honours B.A. or B.Sc. degree (depending on whether the emphasis is on biological or geographic subjects).

2) *Frost Centre for Canadian Heritage and Development Studies*

Research support and M.A. program promoting interdisciplinary approaches to Canadian study topics. A major emphasis within the Centre is an interdisciplinary group which combines SIA and EIA as part of a broader analytic approach to northern and rural developmental and policy problems.

3) *Canadian Studies Program*

The Canadian Studies Program is not located in a single department, but rather it is a cooperative program offered among 12 departments at the undergraduate level. EIA is approached from a problem or issue-oriented direction.

4) *Northern Studies Committee*

This committee of faculty members with interest in northern research acts as a body to coordinate research activities, grant applications, teaching activities, and other matters pertaining to northern studies.

5) *Trent Aquatic Research Centre*

This interdisciplinary research centre undertakes contracts for clients in environmental research and impact assessment studies related to aquatic systems. Students are involved as technicians and researchers.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA:

1) Seminars and workshops for the public on environmentally related matters.

2) OPIRG (Ontario Public Interest Research Group), a public action group active in promoting environmental education among the general public.

ACTIVITÉS :

A. 1) *Environmental and Resource Studies Program*

Il s'agit d'un programme interdisciplinaire pour les étudiants non diplômés qui comprend une formation régulière en évaluation environnementale et permet d'accéder au baccalauréat en arts ou en sciences selon que l'accent a été mis sur la biologie ou la géographie.

2) *Frost Centre for Canadian Heritage and Development Studies*

Soutien de la recherche et programme de maîtrise ès arts favorisant l'étude interdisciplinaire des questions canadiennes. L'une des activités importantes du centre est le travail d'un groupe interdisciplinaire qui intègre l'évaluation environnementale à une approche

analytique générale de la mise en valeur du Nord et des régions rurales ainsi que de la problématique des politiques.

3) *Canadian Studies Program*

Programme conjoint réparti entre 12 départements mais dont aucun d'entre eux n'a l'unique responsabilité. Il est offert aux étudiants non diplômés et l'évaluation environnementale y est étudiée en rapport avec des problèmes ou des questions.

4) *Northern Studies Committee*

Formé de professeurs qui s'intéressent aux recherches nordiques, le comité coordonne les activités de recherche, les demandes de bourses, les activités d'enseignement et les autres questions qui se rapportent aux études nordiques.

5) *Trent Aquatic Research Centre*

Ce centre de recherche interdisciplinaire passe des contrats pour des clients en recherche environnementale et en études d'évaluation des impacts relatives aux systèmes aquatiques. Les étudiants participent en tant que techniciens et chercheurs.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales :

1) Séminaires et ateliers, à l'intention du public, sur des sujets se rapportant à l'environnement.

2) GRIPO (groupe de recherche d'intérêt public de l'Ontario). C'est un groupe d'action qui s'occupe de promouvoir l'éducation du grand public en matière d'environnement.

UNIVERSITY OF VICTORIA

Location/Endroit: Victoria, British Columbia

Mailing Address/ Adresse: University of Victoria
P.O.Box 1700
Victoria, British Columbia
V8W 2Y2

Telephone/ Téléphone: (604) 721-7211

TEACHING:

Department of Biology

GEO 556/ BIO 534/ (4/G) ENVIRONMENTAL IMPACT ASSESSMENT

An introduction to the objectives, philosophy, concepts, methods and social implications of environmental impact assessment. Instructor: S. Abs.

Environmental Studies Program

ES 400A (4) ENVIRONMENTAL IMPACT ASSESSMENT

An introduction to the objectives, philosophy, concepts, methods and social implications of environmental impact assessment.

Department of Geography

GEO 346 (3) COMMUNITY DEVELOPMENT AND PLANNING IN CANADA

Instructor: J. Ransome.

GEO 350A (3) GEOGRAPHY OF RESOURCE MANAGEMENT

Instructor: W. Ross.

GEO 350B (3) GEOGRAPHY OF RESOURCE MANAGEMENT

An analysis of contemporary problems and issues of resource management, focussing particularly upon such matters as common property, multiple use and conflict resolution. Instructor: W.R.D. Sewell.

GEO 450A (4) DECISION-MAKING IN RESOURCES MANAGEMENT: THEORY

An advanced course in resources management and conservation. It aims to shed light on factors which help shape policies and decisions. Instructor: W.R.D. Sewell.

GEO 450B (4) DECISION-MAKING IN RESOURCES MANAGEMENT: PRACTICAL APPLICATIONS

The course draws upon a wide variety of case studies of policy-making, applying theories and techniques reviewed in GEO 450A. Instructor: W.R.D. Sewell.

Faculty of Law

LAW 329 (2,3) ENVIRONMENTAL LAW

This course provides an introduction to the law of environmental impact assessment, focussing on NEPA, the federal environmental assessment process, and British Columbia's planning and assessment procedures. This is a 3-hour, 1.5 unit course, of which half is devoted to EIA issues. Instructor: M. Rankin.

INDIVIDUAL RESEARCH AND WORK:

Bell, M. BIOLOGY

Vegetation, wildlife and mining; vegetation inventory, mapping, interpretation, sensitivity analysis in conjunction with surface mine development: forest site assessment; workshops to facilitate communications/clarification of values between different groups of professionals (e.g., scientists, miners, etc.).

Ellis, D.V. (116, 117, 118, 119) BIOLOGY

Research on marine environmental impact; ecological recovery; assessment procedures.

Sewell, W.R.D. (305, 306, 307, 308)

GEOGRAPHY

Water resources analysis; resources decision-making; assessment of Canadian policies in offshore development; book on environmental impact assessment and government decision-making; research on conflict resolution in wilderness designation and management.

PROGRAM ACTIVITIES:

A. 1) *Department of Geography*

Environmental impact assessment is approached from the focus of resource management, and in particular, through issues concerned with water resources. Activity occurs at both the graduate and undergraduate levels.

2) *Department of Biology*

The Department approaches the study of topics related to EIA/SIA primarily from marine environmental impact. A joint graduate course on EIA is offered by the Department of Biology and the Department of Geography.

3) *Environmental Studies Program*

The program comprises two approaches to environmental studies. The first, the conceptual approach, introduces students to a range of environmentally related disciplines. The second approach is a topical approach, which focusses a selection of courses on a particular problem area. The program also includes an active examination of issues related to both EIA and SIA. Students are exposed to real-world situations through a series of guest lectures and workshops on various subjects.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA: None indicated.

ACTIVITÉS :

A. 1) *Department of Geography*

On y étudie l'évaluation des incidences environnementales du point de vue de la gestion des ressources et, en particulier, des ressources en eau. On retrouve dans ce domaine des étudiants non diplômés et diplômés.

2) *Department of Biology*

On y étudie l'évaluation environnementale surtout du point de vue environnement marin. Les départements de biologie et de géographie offrent conjointement un cours en évaluation environnementale aux étudiants diplômés.

3) *Environmental Studies Program*

On y enseigne deux façons d'aborder l'étude de l'environnement : l'approche notionnelle, qui initie les étudiants à une variété de disciplines se rapportant à l'environnement, et l'approche par sujets, qui consiste en un choix de cours dans un domaine donné où se présentent des problèmes. Le programme comprend aussi une étude sérieuse des questions qui se rapportent aux évaluations environnementales. Les étudiants sont exposés à des situations réelles par une série de lectures et d'ateliers sur divers sujets.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales : Aucunes.

UNIVERSITY OF WATERLOO

Location/Endroit: Waterloo, Ontario

Mailing Address/ Adresse: The University of Waterloo
Waterloo, Ontario
N2L 3G1

Telephone/ Téléphone: (519) 885-1211

TEACHING:

Faculty of Environmental Studies

ENV S 417 (4) LAND USE HISTORY AND LANDSCAPE CHANGE 1

Instructor: J.G. Nelson.

ENV S 418 (4) LAND USE HISTORY AND LANDSCAPE CHANGE 2

Instructor: J.G. Nelson.

ENV S 444 (4) MANAGEMENT OF LAND AND RESOURCES

Emphasis on techniques of inventory, critical evaluation and policy formulation related to sensible use of commodities. Attitudinal, legal and political influences are investigated, particularly as they affect design and implementation of planning decisions.

ENV S 500 (4/G) PROFESSIONAL DEVELOPMENT IN ENVIRONMENTAL MANAGEMENT

School of Urban and Regional Planning

PLAN 319 (3) ECONOMIC AND SOCIAL TECHNIQUES FOR REGIONAL PLANNING

PLAN 357 (3) CONSERVATION AND RESOURCE MANAGEMENT

PLAN 430 (4) SOCIAL POLICY PLANNING

PLAN 623 (G) SOCIAL CONCEPTS IN REGIONAL PLANNING

PLAN 626 (G) PLANNING, CITIZEN INVOLVEMENT AND SOCIAL CHANGE

Centred on the theory and practice of citizen involvement and social change in relation to planning and policy formulation, this course includes the ideology of involvement, social change and intervention strategies, economics and social development, and new models of change based on degrees of centralization. There is an emphasis on Canadian case materials.

PLAN 662 (G) NATURAL RESOURCES PLANNING: POLICIES AND PROGRAMS

Instructor: J.G. Nelson.

PLAN 668 (G) ENVIRONMENTAL IMPACT ASSESSMENT

Techniques and technicalities covered in the first part of the course include legal aspects, teamwork, data collection and manipulation, public participation, and cost-benefit analysis. These topics are followed by case histories considered from the perspective of the proponent, public, consultant and government. Finally, the ethics and politics of environmental impact assessment are reviewed. Students are required to participate in a critique of an environmental assessment that is normally published in the School of Urban and Regional Planning Working Paper Series. Instructor: R. Suffling.

Department of Man-Environment Studies

MENV 241 (2) INTRODUCTION TO ENVIRONMENTAL/SOCIAL IMPACT ASSESSMENT

Introduction to means of assessing proposed approaches to environmentally and socially significant problems and opportunities. Special emphasis on the nature and limitations of conventional means of assessing the impacts, and overall desirability, of technologies, projects, plans and policies. Close examination of case examples. Instructor: R. Gibson.

MENV 337 (3) ENVIRONMENTAL IMPACT ASSESSMENT

The course covers the theory and principles of EIA, surveys various methodologies, discusses the place of EIA in environmental planning in the Ontario Government, reviews case studies, looks at some of the larger issues surrounding EIA, and provides the student with an opportunity to do an actual EIA and take part in a mock hearing. Instructor: G. Michalenko.

MENV 338 (3) SOCIAL IMPACT ASSESSMENT

This course will provide an introduction to the background, theory and methodology of SIA. SIA will be examined as a type of social science research and as a key element in the continuing push for more informed and responsible decision-making in all sectors of society. Instructor: S. Lerner.

MENV 445 (4) IMPACT ASSESSMENT AND POLICY ANALYSIS: PRACTICUM

Students will draw on knowledge and experience gained in the prerequisite theme courses to critique and/or design impact analyses of a variety of real-world activities, including policy initiatives, technological choices, environmentally relevant proposals, economic strategies and others of special interest or significance. Instructor: Staff.

Department of Geography

GEOG 319 (3) ECONOMIC AND SOCIAL TECHNIQUES FOR REGIONAL PLANNING

GEOG 356 (3) RESOURCE MANAGEMENT

Instructor: B. Mitchell.

GEOG 357 (3) CONSERVATION AND RESOURCE MANAGEMENT

GEOG 410 (4) RECREATION GEOGRAPHY

Instructor: G. Wall

GEOG 461 (4) LAND DERELICTION AND REHABILITATION I

Instructor: S. McLellan

GEOG 662 (G) NATURAL RESOURCES PLANNING: POLICIES AND PROGRAMS

GEOG 668 (G) ENVIRONMENTAL IMPACT ASSESSMENT

See course description given for PLAN 668.

INDIVIDUAL RESEARCH AND WORK

Dorney, R.S. (98) — URBAN AND REGIONAL PLANNING

Consulting to National Energy Board, Ontario Energy Board, Ontario Municipal Board, Environmental Assessment Board; environmental supervision of pipeline construction; urban ecosystems; ecological dimensions of environmental assessment; Ontario Society for Environmental Management seminars; waste management site selection; ecosystem rehabilitation.

Dufournaud, C. (191, 397, 398, 399, 400, 401) — GEOGRAPHY

Mathematical modelling and environmental impact assessment.

Francis, G. (131) — MAN-ENVIRONMENT STUDIES

Institutional arrangements for environmental management.

Gibson, R.B. (142, 143, 144) — MAN-ENVIRONMENT STUDIES

The implementation of Ontario's *Environmental Assessment Act*; problems of concept stage assessment (Beaufort Sea Hydrocarbon Production case); response to the deficiencies of EARP.

Hoffman, D. — URBAN AND REGIONAL PLANNING

The identification and mapping of environmentally sensitive areas in Lambton and Perth counties, Ontario; ecological basis for EIA; agricultural development in urban regions; the management of agricultural lands at Canada's margins.

Keith, R. — MAN-ENVIRONMENT STUDIES

Ecological and socio-economic impacts of northern petroleum and mineral development; regional planning in the North.

Knight, K.D. (190, 191)	FACULTY OF ENVIRONMENTAL STUDIES Conceptual ecological modelling and environmental impact assessment.
Lamb, L. (192)	FACULTY OF ENVIRONMENTAL STUDIES Strategies for the protection and management of rare species, relict and representative habitats and landforms; Ecological Advisory Council.
Lerner, S. (198, 199, 200)	MAN-ENVIRONMENT STUDIES Social impact assessment; designed and developed SIA course at University of Waterloo; social impacts of technological change; established network on "teaching and learning" impact assessment.
McLellan, A. (216, 217, 218, 219)	GEOGRAPHY Preparation of EIS's related to pit and quarry operations; land rehabilitation.
Michalenko, G. (224, 225)	MAN-ENVIRONMENT STUDIES Social assessment; effect of resource development on native communities.
Mitchell, B. (240)	GEOGRAPHY Social and economic impacts; watershed management.
Mulamoottil, G. (191)	URBAN AND REGIONAL PLANNING Consulting for the Ministry of Transportation and Communication on environmental impacts related to water resources; urban water quality.
Nelson, J.G. (251, 252, 253, 254, 255, 383)	FACULTY OF ENVIRONMENTAL STUDIES Environmental and socio-economic impact assessment; northern oil and gas development and its assessment; assessment of pipeline corridors; environmentally significant areas; relations between assessment, planning and management.
Newkirk, R.T. (257, 258)	GEOGRAPHY Urban and regional information systems: linkages between digital remote sensing and computer mapping.
Priddle, G. (278)	MAN-ENVIRONMENT STUDIES Socio-economic and ecological impacts, particularly for parks, protected areas, coastal zones.
Suffling, R. (225)	URBAN AND REGIONAL PLANNING EIA of resource development projects in Canada's mid-North (especially forestry); utility corridor route planning; indices of ecological sensitivity to disturbance.
Wall, G. (387)	GEOGRAPHY Impacts of recreation and tourism.

PROGRAM ACTIVITIES:

A. *Faculty of Environmental Studies*

The Faculty includes the School of Architecture, the Department of Geography, the Department of Man-Environment Studies, and the School of Urban and Regional Planning. Certain Faculty members work throughout the Faculty. The Faculty concentrates on using diverse sources of knowledge from its different component disciplines to understand one particular problem area: the interaction of humans and their environments. Although each department has a particular academic focus, environmental and social assessment are areas of study in which all have common interests.

B. EIA Core Program or Streaming?

Yes. With such an integrated approach to human-environment studies, the facilities and guidance are available to those students wishing to pursue a program of study and research in environmental and social impact assessment. Graduate students in Urban and Regional Planning and in Geography may undertake thesis research on EIA.

C. Activities Related to EIA:

Involvement in seminars, workshops and conferences related to EIA/SIA. Of note are:

1) Involvement in the Geographical Inter-University Resource Management Seminars (GIRMS).

2) Ontario Society for Environmental Management workshops held on campus.

3) Publications: *Alternatives: Perspectives on Society, Technology and Environment*; *Environments*; Working Paper Series of the School of Urban and Regional Planning.

ACTIVITÉS :

A. *Faculty of Environmental Studies*

La faculté comprend l'école d'architecture, le département de géographie, le département d'études de l'homme et de l'environnement ainsi que l'école de planification urbaine et régionale. Certains professeurs sont aussi appelés à enseigner dans toute la faculté. Cette dernière s'applique à utiliser les diverses sources de connaissances des différentes disciplines pour comprendre un problème en particulier : l'interaction de l'homme et de son environnement. Bien que, dans chaque département, l'enseignement soit axé sur une discipline particulière, l'évaluation des incidences environnementales et sociales est un sujet d'étude qui intéresse toute la faculté.

B. Programme spécifique aux évaluations environnementales?

Étant donné cette façon aussi intégrée d'aborder l'étude de l'homme et de l'environnement, les étudiants qui désirent suivre un programme d'études et de recherches en EIES ont à leur disposition les ressources et l'aide nécessaires. Les étudiants diplômés en planification urbaine et régionale, et en géographie, peuvent entreprendre une thèse en évaluation environnementale.

C. Activités se rapportant aux évaluations environnementales :

Séminaires, ateliers et conférences se rapportant à l'EIES.

À signaler :

1) Participation aux séminaires géographiques inter-universités sur la gestion des ressources.

2) Les ateliers de l'Ontario Society for Environmental Management ont lieu à l'université.

3) Publications : *Alternatives: Perspectives on Society, Technology and Environment*; *Environments*; documents de travail du School of Urban and Regional Planning.

THE UNIVERSITY OF WESTERN ONTARIO

Location/Endroit:	London, Ontario
Mailing Address/ Adresse:	The University of Western Ontario London, Ontario N6A 3K7
Telephone/ Téléphone:	(519) 679-2314

TEACHING:

Department of Geography

GEOG 135 (2/3) ENVIRONMENT, RESOURCES AND PLANNING

Study of human use of and impact on environment and resources, with emphasis on Canada: the interpretive model integrates ecology, strategies and institutional arrangements, perception and attitudes and technology. Instructor: C.M. Pearce.

GEOG 235b (2) INTRODUCTION TO RESOURCES MANAGEMENT

The application of an interpretive model which integrates ecology, strategies and institutional arrangements, perceptions, attitudes and values together with technology. Topics include environmental assessment, land classification and resources supply and demand forecasting. Instructors: R. Butler, M. Troughton and L.G. Smith.

GEOG 324 (3/4) LAND USE AND DEVELOPMENT ISSUES

Instructor: H. Hossé.

GEOG 335 (3/4) RESOURCE EVALUATION AND ENVIRONMENTAL ASSESSMENT

Methods for resource evaluation in the context of environmental and social impact assessment and the determination of environmental quality. Goals and strategies for planned use and conservation of resources. Instructor: L.G. Smith.

GEOG 337 (3/4) RECREATION GEOGRAPHY

Instructor: R. Butler.

GEOG 350 (3/4) LOCATIONAL ISSUES IN PUBLIC AND PRIVATE SECTOR PLANNING

Instructor: M. Goodchild.

GEOG 535 (G) SEMINAR ON RESOURCE MANAGEMENT AND THE ENVIRONMENT

Conservation, planning and management of natural resources, landscapes and the environment. Problems of impact assessment, integrated planning and multiple use. Emphasis upon Canadian examples, strategies and managements. Instructors: R. Butler, M. Troughton, L.G. Smith and C.M. Pearce.

GEOG 537 (G) SEMINAR ON RECREATION AND TOURISM RESOURCES

Analysis of resources utilized for leisure activities, and problems related to their planning and management. Identification and assessment of impacts resulting from recreation and tourism. Study of theories relating to the evolution, development and management of recreation and tourist areas. Instructors: R. Butler and L.G. Smith.

GEOG 538 (G) RURAL RESEARCH SEMINAR

The seminar provides a forum for those interested in agriculture, rural and related branches of geography. Central themes include agricultural typology, rural planning and development, the rural-urban interface, countryside studies, and environmental and institutional impact studies. Instructor: M. Troughton.

King's College — Department of Sociology

SOC 151b (2/3) MACRO-URBANIZATION

Examines social impact assessment (SIA) as one part of environmental impact assessment. In particular, the course uses the steps of SIA to deal with industrialization in rural areas, urbanization, regionalization, and the formation of very large urban systems. Instructor: J.D. Flynn.

INDIVIDUAL RESEARCH AND WORK:

Butler, R.W. (47, 48, 49, 50, 51, 52, 53, 54)

GEOGRAPHY

Recreation and tourism, impact assessment; identification and measurement of social, political and linguistic impacts of recreation and tourism; leisure patterns of population in remote locations; effects of energy problems on recreation and tourism; tourism as a process in landscape development; effects of energy developments on local communities; invited expert, Beaufort Sea Environmental Assessment.

Flynn, J.D. (130)

KING'S COLLEGE

Community impact assessment; summary report of SIA literature for the regional development sector of IIASA; United Church of Canada committee to monitor exemptions given under EIA legislation; energy policy.

Green, M.S. (27, 28, 29, 30, 151, 152, 153, 154, 155, 156, 274)

GEOGRAPHY

Northern development: applied network analysis and industrial location; socio-economic impact monitoring (of Norman Wells Oil Field Development and Pipeline Project).

Huron Erie Land Use Study (HELUS)

The objectives of this group include environmental impact assessment. Several members have consulted on behalf of the group or have arranged seminars on aspects of EIA; environmental assessment for Ontario Hydro of 500 KV power transmission corridor from the Bruce Peninsula to London, Ontario, Highway 401 and a transformer station in London.

King, R.H.

GEOGRAPHY

Research interests include: soils and waste management; the persistence of chemical residues in contaminated soils; acid rain and its pedologic impact; soils as palaeoenvironmental indicators.

Pearce, C.M. (266, 267, 268)

GEOGRAPHY

Use of remote sensing data to inventory and monitor natural resources; remote sensing input into geographic information systems; environmental impact to vegetation and wildlife habitat resulting from hydroelectric installations, grazing and recreation; environmental relationships in arctic and sub-arctic wetlands; philosophy and implementation of ecological land classification systems.

Smith, L.G. (321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333)

GEOGRAPHY

Institutional arrangements for energy planning in Canada; public participation; recent revisions and continuing concerns regarding EARP; northern land use planning; landscape aesthetics; park planning.

Troughton, M.J. (54, 370, 371, 372, 373, 374, 375)

GEOGRAPHY

Rural planning and development, including rural land use, settlement and services, environmental impacts, countryside and amenity studies, and the nature of the rural-urban fringe. Agricultural systems in developed countries, including part-time farming and the industrialization of agriculture.

Wightman, W.R.

GEOGRAPHY

The social and economic processes impacting on the pattern of resource utilization, promoting the development of the rural landscape and changing the rural-urban balance in the community with special reference to Ontario in the nineteenth and early twentieth centuries.

PROGRAM ACTIVITIES:

A. *Honours Program in Geography (Resources Conservation)*

The Honours Geography (Resources Conservation) Program is designed to provide a specialized degree within geography in which the emphasis is placed on investigation of the nature and management of resources, primarily in a Canadian context, and which will fit the student either directly for a career in public or private concerns engaged in resource management, or for graduate work in resources and/or environmental studies.

B. EIA Core Program or Streaming?

Students can stream with emphasis on EIA in the Resources Conservation Program, Department of Geography.

C. Activities Related to EIA:

1) Huron Erie Land Use Symposium, November, 1985, "Issues for the '80s."

2) Department of Geography: Public Lecture, P. Elder, University of Calgary, November 1985 — "Legal Basis for Environmental Impact Assessment in Canada: Can Social Impact Assessment Legally Be Required in Canada?"

ACTIVITÉS :

A. *Honours Program in Geography (Resources Conservation)*

Ce programme vise à donner un degré spécialisé en géographie dans lequel on place l'emphase sur la définition de la nature et de la gestion des ressources, particulièrement dans un contexte canadien, et qui bénéficiera à l'étudiant soit pour une carrière dans une institution publique ou privée de gestion des ressources, soit pour poursuivre ses études en ressources et/ou en environnement.

B. Programme spécifique aux évaluations environnementales?

Les étudiants peuvent mettre l'emphase sur l'évaluation environnementale dans le programme de conservation des ressources, du département de géographie.

C. Activités se rapportant aux évaluations environnementales :

1) Colloque du «Huron Erie Land Use» intitulé «Issues for the '80s», novembre 1985.

2) Conférence, département de géographie, «Legal Basis for Environmental Impact Assessment in Canada: Can Social Impact Assessment Legally Be Required in Canada?» par P. Elder, University of Calgary, novembre 1985.

WILFRID LAURIER UNIVERSITY

Location/Endroit: Waterloo, Ontario

Mailing Address: Adresse: Wilfrid Laurier University
Waterloo, Ontario
N2L 3C5

Telephone/ Téléphone: (519) 884-1970

TEACHING:

Department of Geography

241/291-3 (2) GEOGRAPHY OF RESOURCE POLICY AND ADMINISTRATION

Focus upon the concepts and role of policy, planning and administration in Canadian resource management (includes EIA and SIA for specific policy fields). Instructor: R. Payne.

242/292-3 (2) RESOURCE MANAGEMENT IN THE GREAT LAKES BASIN

Instructor: J. McMurry.

290-33 (2) PRINCIPLES OF RESOURCES MANAGEMENT

Specific concepts, methods and techniques of resource management practice in forestry, fisheries, water, air and land resources (includes EIA and SIA in some depth). Instructor: R. Payne.

342/392-3 (3) GEOGRAPHY OF WATER RESOURCES

Concepts and techniques of water basin management including benefit-cost analysis, public participation and social impact assessment. Instructor: G. Subins.

493-3 (4) PROBLEMS IN LAND RESOURCES MANAGEMENT

Seminar discussing the social, economic, ecological and political dimensions of land use conflicts and issues.

610 (G) GEOGRAPHICAL PERSPECTIVES ON RESOURCES MANAGEMENT

Instructor: J. Hall.

611 (G) DEVELOPMENT AND PROBLEMS IN RESOURCES MANAGEMENT IN SELECTED AREAS

Instructor: J. Pigram.

697 (G) HUMAN ECOLOGY OF STRESSED ENVIRONMENTS

Graduate research seminar focussing on natural resources, their development, the natural hazards and adverse environmental impacts associated with development. Instructors: K. Hewitt, J. Hall, G. Head and H. Whitney.

INDIVIDUAL RESEARCH AND WORK:

Hall, J. GEOGRAPHY

Editor, *Geographical Inter-University Resource Management Seminars Journal*; impact assessment of climate variation in Canada.

Payne, R.J. GEOGRAPHY

Northern land use planning; visitor activity planning and management in Canadian national parks; social and economic importance of wildlife.

PROGRAM ACTIVITIES:

A. *Department of Geography*

The Department of Geography provides a focussed examination of issues concerning EIA and SIA. In addition, a course dealing specifically with impact assessment, "Impact Assessment in Resource Management", may soon be offered.

B. EIA Core Program or Streaming?

Environmental and social impact assessment are, at present, strong components of the University's focus on resource management, but they do not, as yet, represent a specific program or option of study in the Department of Geography.

C. Activities Related to EIA:

The Department of Geography actively participates in the organization and dissemination of information from the Geographical Inter-University Resource Management Seminars (GIRMS), held jointly with the Universities of Guelph, Waterloo and Western Ontario. Many topics examined during the GIRMS meetings relate directly to EIA.

ACTIVITÉS :

A. *Department of Geography*

C'est au département de géographie que l'étude des questions se rapportant à l'évaluation environnementale est la plus au point. En outre, les professeurs du département ont mentionné qu'on offrira bientôt un cours portant spécialement sur l'évaluation des incidences et qui aura pour titre «Impact Assessment in Resource Management.»

B. Programme spécifique aux évaluations environnementales?

Actuellement, l'évaluation environnementale compte pour beaucoup dans l'intérêt que porte l'université à la gestion des ressources, mais elle ne fait pas encore l'objet d'un programme ou d'une option d'études au département de géographie.

C. Activité se rapportant aux évaluations environnementales :

Le département de géographie participe activement aux séminaires géographiques inter-universités sur la gestion des ressources, qui sont tenus conjointement avec les universités de Guelph, Waterloo et Western Ontario et à la diffusion de l'information qui y est présentée. Un grand nombre de sujets étudiés lors de ces séminaires se rapportent directement à l'évaluation environnementale.

UNIVERSITY OF WINDSOR

Location/Endroit: Windsor, Ontario

Mailing Address/ Adresse: The University of Windsor
Windsor, Ontario
N9B 3P4

Telephone/ Téléphone: (519) 253-4232

TEACHING:

Department of Geography

42-200 (2) INTRODUCTION TO RESOURCE MANAGEMENT

Basic concepts pertaining to natural resources, the impact of their use on the ecosystem, and the problems in their management. Emphasis will be placed on the growing demand for resources, the functional interaction between human society and its physical environment, and the spatial patterns of resource use and ecological impact. Instructor: I. Stebelsky.

42-332 (3) ECOLOGICAL AND DEMOGRAPHIC PRINCIPLES FOR RESOURCE MANAGEMENT

Instructor: C. Lakhan.

42-334 (3) ENVIRONMENTAL IMPACT ASSESSMENT

The history, theories and principles of EIA will be examined and various methodologies for the preparation of an EIA report will be evaluated. Aspects of ethics, environmental laws, and administrative requirements for EIA studies in Canada are considered, and various EIA case studies are assessed and prepared. Instructor: C. Lakhan.

42-342 (3) URBAN AND REGIONAL PLANNING II - CONTEMPORARY ISSUES AND APPLIED ASPECTS

Various aspects of land use planning and urban development are analyzed, covering official plans, land severances, subdivision, design, urban renewal, recreation needs, transportation systems, downtown development, shopping centres and industrial parks. Approximately one-third of the course deals with EIA/SIA. Students are required to carry out an environmental impact study for a proposed planning project. Instructor: G. Romsa.

42-360 (3) THE CANADIAN ARCTIC

Instructor: J. Jacobs.

42-453 (4) COASTAL ZONE RESOURCE MANAGEMENT

Instructor: P. LaValle.

42-459 (4) ENVIRONMENTAL ASSESSMENT OF AIR AND WATER RESOURCES

The analysis of man's effect on the atmosphere and hydrosphere in the Great Lakes region. Instructor: M. Sanderson.

Department of Biological Science

55-201 (1) APPLIED ECOLOGY

A survey of the biological impact of man and modern technology on our environment with a view to mitigating adverse effects. Topics include causes and effects of air and water pollution, the toxic and carcinogenic effects of chemicals in the environment, and the effects of disturbance on natural communities. Instructor: Staff.

Faculty of Engineering

86-452 (4) AIR POLLUTION CONTROL

Instructors: A.W. Gnyp and C.C. St. Pierre.

87-330 (3) ENVIRONMENTAL ENGINEERING I

Instructors: J.K. Bewtra and N. Biswas.

86-522/ 87-532/ 99-522 (G) ENGINEERING AND THE ENVIRONMENT

Man and his environment; evaluation of biosphere; ecological balances; pollution and environment; impacts of engineering activities on the environment — land, air, water, vegetation and other living beings; criteria, standards and goals; environmental factors to be considered in the engineering designs. Consideration and discussion of typical examples. Instructors: Staff.

Faculty of Law

98-905 (G) ADVANCED MUNICIPAL/PLANNING/ ENVIRONMENTAL LAW

Instructor: J.G.W. Manzig.

98-920 (G) ENVIRONMENTAL LAW

This introductory course uses a seminar-workshop structure to study the existing legislative and administrative machinery for environmental management and protection, with special emphasis on the environmental law of Ontario. The course will include a comparative analysis of U.S. Federal and Michigan environmental law and may also glance at environmental practice and procedure in selected Commonwealth and European jurisdictions. Instructor: J.G.W. Manzig.

INDIVIDUAL RESEARCH AND WORK:

Bewtra, J.K. CIVIL ENGINEERING

EIA and risk analysis of large industrial projects.

Biswas, N. CIVIL ENGINEERING

EIA — international experience, rural sanitation.

Blenman, M. GEOGRAPHY

Urbanization, transportation and social impact.

Gnyp, A.W. CHEMICAL ENGINEERING

EIA/SIA — air quality.

Jacobs, J. GEOGRAPHY

Climatic modification and assessment of man's impact on the environment.

Lakhan, C. GEOGRAPHY

EIA methodology and applications in physical resource management.

LaValle, P. GEOGRAPHY

Assessment of human activities on water quality and shoreline processes.

Manzig, J.G.W. LAW

Environmental law and municipal/planning/environmental law; legal aspects of environmental assessment, especially acid rain and toxic pollution.

McCorquodale, J.A. CIVIL ENGINEERING

EIA — water quality.

Romsa, G. GEOGRAPHY

Assessment of urban activities and their impact on the environment.

St. Pierre, C.C. CHEMICAL ENGINEERING

EIA and risk analysis of large industrial projects.

Sanderson, M. GEOGRAPHY

Analysis of man's effects on the atmosphere and hydrosphere.

Stebelsky, I. GEOGRAPHY

Analysis of the effects of agricultural activities on the ecosystem in the Soviet Union.

Trenhaile, A. GEOGRAPHY

Assessment of human impact on shoreline erosion.

PROGRAM ACTIVITIES:

A. 1) *Department of Biological Science*

The Department of Biological Science offers an undergraduate honours program and a graduate program in population and environmental biology. It also works closely with the Great Lakes Institute — especially in matters pertaining to potentially toxic substances which may enter the ecosystem of the Great Lakes.

2) *Department of Geography*

EIA and SIA comprise an integral part of the two professionally oriented Honours Geography programmes, in Resource Management and in Urban Planning. The Department operates an Arctic School for students interested in studying topics related to the northern environment. In addition, students may do research as part of their study for the Department at the Great Lakes Institute.

3) *Great Lakes Institute*

The Great Lakes Institute is a research body whose principal responsibilities are to encourage the study of environmental problems in the Great Lakes ecosystem, to offer appropriate solutions and to foster public awareness of its findings. Researchers involved in work at the Institute are from the departments of biology, chemistry, civil and chemical engineering, economics, geography, geology, law and political science. The current focus of the Institute is on toxic substances in the Great Lakes ecosystem, and future water levels.

B. EIA Core Program or Streaming? None indicated.

C. Activities Related to EIA:

The Great Lakes Institute as well as the Department of Biological Science regularly sponsor seminars and public lectures on environmental impact topics.

ACTIVITÉS :

A. 1) *Department of Biological Science*

Ce département offre un programme spécialisé pour étudiants diplômés et non diplômés en biologie de la population et de l'environnement. Ils travaillent en étroite collaboration avec le Great Lakes Institute tout particulièrement en ce qui concerne les substances toxiques éventuelles qui peuvent entrer dans le système écologique des grands lacs.

2) *Department of Geography*

Ce département offre un programme spécialisé en gestion des ressources. Le département opère une école de l'arctique pour les étudiants interessés aux études nordiques. En plus, les étudiants peuvent faire de la recherche au Great Lakes Institute.

3) *Great Lakes Institute*

L'institut est un centre de recherche. Ses principales responsabilités sont d'encourager l'étude des problèmes environnementaux dans l'écosystème des grands lacs, d'offrir des solutions appropriées et de faire connaître ses résultats au public. Les chercheurs de l'institut proviennent des départements de biologie, chimie, génie civil et chimique, économie, géographie, géologie, droit et sciences politiques.

B. Programme spécifique aux évaluations environnementales? Aucun.

C. Activités se rapportant aux évaluations environnementales :

Le Great Lakes Institute et le département des sciences biologiques commanditent régulièrement des séminaires et des conférences publiques sur des sujets ayant trait aux incidences environnementales.

YORK UNIVERSITY

Location/Endroit: Downsview, Ontario

Mailing Address/ Adresse: York University
4700 Keele St.
North York (Toronto), Ontario
M3J 1P3

Telephone/ Téléphone: (416) 667-2100

TEACHING:

Department of Sociology

(G) SOCIOLOGY OF NORTHERN DEVELOPMENT

An analysis of the impact of resource development projects on northern hinterland communities. Analysis based upon a theoretical model of socio-economic impact and an accompanying methodology derived from the literature, and a completed socio-economic impact study of six northern communities. Instructor: B. Blishen.

Faculty of Environmental Studies

ES 6131 (G) ENVIRONMENTAL CONSIDERATIONS IN SETTLEMENT PLANNING

This course focusses on planning approaches to promote environmental protection, including policy development, impact assessment, development controls, etc. Instructor: A. Armour.

ES 6186 (G) ENVIRONMENTAL IMPACT ASSESSMENT

This seminar examines the theory and practice of environmental impact assessment. Both Canadian and American approaches to EIA are addressed, with emphasis given to Ontario's legal and administrative requirements. The bulk of the course work focusses on the concepts, principles and methods of impact assessment and review. The course includes practical group exercises. Instructor: A. Armour.

ES 6187 (G) SOCIAL IMPACT ASSESSMENT

Introductory examination of Canadian and American legislative/ administrative contexts of social impact assessment, its role in environmental impact assessment, basic procedures (profiling, projecting, assessing and evaluating), citizen participation, and the adequacy of and alternatives to social impact assessment. Instructor: A. Armour.

ES 6481 (G) IMPACT ASSESSMENT WORKSHOP

This course focusses on the application of methods and techniques for environmental assessment, including social impact assessment. Instructor: A. Armour.

Osgoode Hall Law School

(3) ENVIRONMENTAL PROTECTION LAW

Examines various aspects of environmental law, including EIA and the law. Instructor: D.P. Emond.

(3) RESOURCES DEVELOPMENT LAW

A portion of the course examines the federal Environmental Assessment and Review Process (EARP). Instructor: D.P. Emond.

(3) ENERGY LAW

Instructor: P.C. Cumming.

INDIVIDUAL RESEARCH AND WORK:

Armour, A. (5, 6, 193, 194) FACULTY OF ENVIRONMENTAL STUDIES

Energy conservation through land use planning; community energy profiling; social/environmental impact assessment; environmental planning.

Blishen, B. (24)	SOCIOLOGY Socio-economic impact modelling; consultant to Department of Indian Affairs and Northern Development on socio-economic modelling; seminars on socio-economic impact modelling.
Emond, D.P. (120, 121, 122)	OSGOODE HALL LAW SCHOOL Revising text *Environmental Assessment Law in Canada*; land use planning and environmental assessment; fairness and natural justice in environmental assessment hearings.
Homenuck, P.	FACULTY OF ENVIRONMENTAL STUDIES Social planning; SIA; Canadian native issues; land use planning; public participation.
Lang, R.S. (192, 193, 194)	FACULTY OF ENVIRONMENTAL STUDIES Environmental impact assessment; land use planning; energy conservation through land use planning; waste management master planning, landfill site selection and associated environmental/social impact assessment; integrated resource planning in the Great Lakes Basin.
Stevenson, C.	OSGOODE HALL LAW SCHOOL Problems of evidence proof and argument in environmental decision-making processes.

PROGRAM ACTIVITIES:

A. 1) *Faculty of Environmental Studies*

The Faculty provides a program of teaching and research at the graduate level. Students and faculty members pursue various aspects of human-environment interaction in their research. Although there is no EIA/SIA program *per se*, students may pursue a research path in this area drawing from the various areas covered by faculty members.

a) *Joint Law-Environmental Studies Program* This program allows students to marry interests in the study of law and environmental issues. Students examine the need to protect environmental conditions in the many areas of human activity, and the many controls available through jurisprudence.

b) *Administrative and Environmental Studies Program* The program integrates concerns and skills required for careers in management and administration in the private and public sectors with an emphasis on environmental matters. This area of study results from the fact that major organizations are being forced to deal with environmental concerns in their day-to-day operations.

2) *Department of Sociology*

The social impact of development projects is under study by members of the department. Of special interest is the analysis of the impact of resource development projects on northern hinterland communities. The department maintains close ties with the Faculty of Environmental Studies.

3) *Osgoode Hall Law School*

The teaching and research of subjects related to EIA/SIA undertaken by members of the Law School focusses on two main areas. The first area relates to resources development and those parts of the legal process that are concerned with this. The second is the hearing process; in particular, an examination of whether or not the principles of fairness and natural justice are adequate in the various EIA processes.

B. EIA Core Program or Streaming?

The Faculty of Environmental Studies provides a program of teaching and research at the graduate level. The Faculty's approach to graduate education emphasizes individualized learning. There is no core curriculum or mandatory set of courses. Students pursue programs of study focussed on their own specific learning objectives, career motivations and interests. Although there is no EIA/SIA program *per se*, students may pursue a research path in this area, drawing from the resources provided by the Faculty as well as those available in other faculties at York and, where necessary, at other universities.

C. Activities Related to EIA:

The Faculty of Environmental Studies offers seminars and workshops on topics related to EIA/SIA for the general public and for those in the private and public sectors.

ACTIVITÉS :

A. 1) *Faculty of Environmental Studies*

La faculté offre un programme d'enseignement et de recherche pour les étudiants diplômés. Au cours de leurs recherches, étudiants et professeurs étudient divers aspects de l'interaction de l'homme et de l'environnement. Bien qu'il n'existe pas de véritable programme d'études en évaluation environnementale et sociale les étudiants peuvent poursuivre des recherches sur le sujet en puisant dans les divers domaines d'enseignement des professeurs.

a) *Joint Law — Environmental Studies Program*
Offert aux étudiants intéressés par le droit et par les questions environnementales. On y étudie la nécessité de protéger l'environnement dans les nombreux domaines de l'activité humaine ainsi que les nombreux contrôles à cet effet auxquels il est possible de recourir par la jurisprudence.

b) *Administrative and Environmental Studies Program*
Le programme intègre les aptitudes à régler les problèmes et les connaissances nécessaires aux étudiants qui se destinent à une carrière en gestion et en administration dans le secteur privé et public; on y met l'accent sur les questions environnementales. Ce domaine d'études a été créé parce que les organisations importantes doivent régler des problèmes qui se rapportent à l'environnement au cours de leurs opérations journalières.

2) *Department of Sociology*

L'impact social des projets d'exploitation est à l'étude par le département. On s'intéresse particulièrement à l'analyse de l'impact des projets d'exploitation des ressources sur les collectivités nordiques de l'arrière-pays. Le département entretient des rapports étroits avec la Faculty of Environmental Studies.

3) *Osgoode Hall Law School*

L'enseignement et la recherche en EIES portent sur deux principaux domaines : l'exploitation des ressources et son aspect juridique, et le processus actuel des audiences lui-même. On s'interroge en particulier sur les principes d'équité et de justice naturelle dans les divers processus d'évaluation environnementale.

B. Programme spécifique aux évaluations environnementales?

La Faculty of Environmental Studies offre un programme d'enseignement et de recherche pour étudiants diplômés. La faculté met l'accent sur les programmes d'études individuels. Il n'y a pas de programme approfondi ni de cours obligatoire. Les étudiants poursuivent des programmes d'études qui portent sur leurs propres aspirations en ce qui concerne leurs études, leurs carrières et leurs intérêts. Bien qu'il n'existe pas d'orientation en évaluation environnementale en tant que telle, les étudiants peuvent puiser à même les ressources de la faculté ainsi que celles d'autres facultés à York, et, si nécessaire, d'autres universités pour effectuer leur recherche dans ce domaine.

C. Activités se rapportant aux évaluations environnementales :

La Faculty of Environmental Studies présente, à l'intention du grand public et des personnes qui travaillent dans le secteur privé et public, des séminaires et des ateliers sur des sujets qui se rapportent aux évaluations environnementales.

CEARC GRADUATE STUDENT RESEARCH CONTRACTS 1985-1986 AND 1986-1987

As described in its publication entitled, "Philosophy and Themes for Research", CEARC has adopted several strategies for improving the scientific, institutional and procedural bases for environmental impact assessment (EIA) in Canada. One of the key approaches is to encourage and promote innovative thinking about EIA in the academic community and especially among the graduate students enrolled at Canadian institutions of higher education.

The Council allocates at least ten percent of its annual budget of fifty thousand dollars to award contracts to graduate students for producing documents in EIA related areas. These contracts, worth five thousand dollars each, are awarded through a selection process starting with the nomination of up to three graduate students per university by the dean of Graduate Studies. An independent selection committee then evaluates all nominations and ranks them in descending order of merit. The first ten candidates receive the contracts automatically. In some cases, the CEARC Secretariat may receive funds from other sources and give additional contracts.

The list of recipients for such contracts along with a brief description of proposed research or the nature of the document produced is attached.

For more information pertaining to the CEARC Graduate Student Research Contracts and other activities of the Council, please contact:

Dr. M. Husain Sadar
Manager
CEARC Secretariat
13th Floor, Fontaine Building
200 Sacré-Coeur Blvd.
Hull, Quebec
K1A 0H3

Tel: (819) 997-1000

CONTRATS DE RECHERCHE DU CCREE POUR DIPLÔMES UNIVERSITAIRES 1985-1986 ET 1986-1987

Tel qu'il l'a mentionné dans sa publication intitulée «Orientations et thèmes de recherche», le CCREE a adopté diverses stratégies en vue d'améliorer les infrastructures d'ordre scientifique, institutionnel et fonctionnel reliées à l'évaluation des incidences environnementales (EIE) au Canada. L'une des principales formules adoptées consiste à encourager et promouvoir la réflexion et la recherche de solutions originales concernant l'EIE dans le monde universitaire et particulièrement auprès des étudiants des 2e et 3e cycles inscrits dans des établissements canadiens d'études supérieures.

Le Conseil réserve au moins 10 pour cent de son budget annuel (50 000 $) pour attribuer des contrats à des étudiants des 2e et 3e cycles pour la production de documents sur des questions reliées à l'EIE. Ces contrats, d'une valeur de 5 000 $ chacun, sont attribués de façon sélective. Trois étudiants au maximum par université sont désignés par le doyen des études supérieures. Un comité de sélection indépendant évalue ensuite les candidats et les classe par ordre descendant de mérite. Les dix premiers candidats reçoivent automatiquement des contrats. À l'occasion, le CCREE peut obtenir des fonds d'autres sources et accorder des contrats supplémentaires.

Vous trouverez ci-jointe la liste des titulaires de ces contrats ainsi qu'une brève description de la recherche proposée ou de la nature du document produit.

Pour plus de renseignements concernant les contrats de recherche pour les diplômés universitaires du CCREE et les autres activités du Conseil, veuillez contacter :

M. Husain Sadar
Gestionnaire
Secrétariat du CCREE
13e étage, Immeuble Fontaine
200 Boulevard Sacré-Coeur
Hull (Québec)
K1A 0H3

Tél.: (819) 997-1000

CEARC GRADUATE STUDENT RESEARCH CONTRACTS/
CONTRATS DE RECHERCHE DU CCREE POUR DIPLÔMÉS UNIVERSITAIRES
1985-1986

STUDENT/ ÉTUDIANT(E)	DEPARTMENT/ DÉPARTEMENT	UNIVERSITY/ UNIVERSITÉ	THEME OF REPORT/SUJET DU RAPPORT
Walter R. Skinner	Geography	Windsor	The biophysical aspects of the monitoring of protocols and the prediction of environmental changes, as postulated through the analysis of tree rings from the Walpole Island Reserve in the St. Clair River delta.
Alex Grzybowski	Geography	Waterloo	An investigation of the dynamic interrelations between the biophysical and socio-economic processes of South Moresby Island (Queen Charlotte Islands, B.C.), in order to facilitate ecological EIAs of resource development pressures.
Mervyn J. Norton	Political Science	York	An investigation into the impact assessment process undertaken by the Ontario Waste Management Corporation for the purpose of site selection of waste processing and disposal facilities, so as to indicate which forms of assessment are most appropriate to regulatory policy decision-making tasks, including legitimization through public participation.
Catherine Leduc	Géographie	Montréal	Les impacts du drainage souterrain sur la morphologie des cours d'eau ainsi que le problème de l'érosion des terres dans les régions agricoles.
Yves Phaneuf	Institut d'urbanisme	Montréal	Le développement d'une méthodologie pour le prise de décision dans le processus d'évaluation des impacts sur l'environnement (EIE).
Gordon L. Brown	Institute of Animal Resource Ecology	British Columbia	The development and addition of an acid deposition/air pollution damage function to the FORCYTE II forest ecosystem model, for predicting the long-term effect of air pollution on forest species in B.C.
Christine Riek	Commerce and Business Administration	British Columbia	The identification and evaluation of strategies of risk analysis that might be employed by participants in an EIA process, so as to develop guidelines for conducting risk analysis in EIA.

Elizabeth Pope	Natural Resources Management Program	Simon Fraser	A demonstration of the process by which techniques derived from EIA can be applied to forest land allocation decisions, and the preparation of a methodology which measures the impacts and trade-offs of various alternate resource uses.
L. Dennis Gignac	Botany	Alberta	The development of a methodology for understanding *Sphagnum* (peat moss) species' tolerance to pollution stresses, thereby predicting the potential impact of pollution on the environment.
Ann J. Weiszmann	Institute of Natural Resources	Manitoba	The development of risk analysis schema for the various categories of environmental hazard, relating to the transportation alternatives proposed for the transport of crude oil produced in the Beaufort Sea region of northern Canada.
C. James Warren	Soil Science	Alberta	The determination of the factors and processes that occur during soil acidification and their effects on the biogeochemistry of trace elements; specifically, how the lowering of soil pH values alters the properties of soil components and affects in turn the speciation, absorption and mobility of trace elements in soil.
Michael E. Hagen	Natural Resources Management Program	Simon Fraser	A review of water log handling impacts on estuarine environments, with attention to the Campbell River Estuary, British Columbia.
Marcia Edwards	Geography	Windsor	The development of a method for evaluating reclamation works in a land-scarce environment by conducting a perception/attitude study based on the impact of bauxite mining in Jamaica.
Ellen Petticrew	Biology	McGill	The development of a general model which allows the prediction of zones of accumulation and/or erosion in lake littoral zones.
Ioannis Anestis	Faculty of Engineering	McGill	The determination of sublethal toxicant pre-exposure of Rainbow Trout (*Salmo gairdneri*) to three different species of the same toxicant.

CEARC GRADUATE STUDENT RESEARCH CONTRACTS/
CONTRATS DE RECHERCHE DU CCREE POUR DIPLÔMÉS UNIVERSITAIRES
1986-1987

STUDENT/ ÉTUDIANT(E)	DEPARTMENT/ DÉPARTEMENT	UNIVERSITY/ UNIVERSITÉ	THEME OF REPORT/SUJET DU RAPPORT
Eric Hundert	Institute for Resource and Environmental Studies	Dalhousie	An investigation into the broader implications of group ventures (companies or co-operatives formed by woodlot owners in a specific area to provide forest management services) on rural Nova Scotia, so as to assess the impacts of a group venture on its members, the forests, and the local community.
Carolyn O'Fallon	Natural Resources Management Program	Simon Fraser	An attempt to determine the effectiveness and efficiency of the British Columbia Mine Development Review Process in dealing with environmental assessment concerns.
Yves Rochon	Institut national de la recherche scientifique	Québec	La recherche proposée veut mettre en évidence les besoins en information au niveau des délibérés consultatifs et décisionnels et évaluer l'utilité du contenu informationnel de l'étude d'impact, pour la prise de décision.
Gordon L. Brown	Institute of Animal Resource Ecology	British Columbia	The development of a methodology to incorporate expert judgment into a risk assessment of ozone on agricultural resources in the Fraser Valley.
Rosemary Church	Biomedical Sciences	Guelph	The development of an *in vivo* assay for genotoxicity in hair follicle cells.
Maureen Reed	Geography	Toronto	An attempt to determine the nature and extent of changes in the relationship between government and Inuvialuit organizations responsible for environmental assessment on Inuvialuit lands, so as to determine the potential for native influence in evaluating environmental change on lands settled by negotiated agreement.
Richard Palidwor	Political Science	York	A focus on the problem of the symbolic and linguistic construction of sulphur dioxide pollution in Ontario.
Catherine Shapcott	Faculty of Environmental Studies	York	A focus on the relevance of the concept of environmental impact for native people and environmental impact assessment as an input to public policy decisions.

Nanita T. Yap	Institute for Resource And Environmental Studies	Dalhousie	The development of an integrated residuals (risk) management framework that can serve as a planning tool for regional and industrial developments.
Maureen A. Bush	Faculty of Environmental Design	Calgary	An examination of the usefulness of public participation in resource development after project approval, to consider its costs, barriers and advantages, and the mechanisms which have been tried or could be useful.
Brad Lucas	School of Urban and Regional Planning	Queen's	The development of a framework for analysing the socio-economic impacts that are brought about by the construction and operation of a major project in the urban environment, specifically the Toronto domed stadium.

BIBLIOGRAPHY / BIBLIOGRAPHIE

To advance the state of the art in EIA it is necessary not only to improve the contact network between researchers but also important to make known the written material that is available on the subject. This bibliography was drawn from material submitted to us during our surveys and is updated annually. It is not meant to be a definitive listing of every publication on EIA, but rather a listing of what has been recently written and is available. In general, submissions are restricted to the last four years with the exception of major works on EIA. The university affiliation of the author(s) is provided in parentheses at the end of each reference.

Si l'on désire perfectionner les règles de l'art dans le domaine des évaluations d'impacts environnementaux, il ne suffit pas d'améliorer le réseau de communications entre chercheurs mais il faut encore faire connaître les ouvrages traitant de ces sujets. Cette bibliographie, qui est mise à jour annuellement, provient du matériel qui nous a été soumis durant notre recherche. L'intention n'est pas de donner une liste définitive de tous les ouvrages concernant le sujet mais plutôt d'avoir une liste de ce qui a été écrit récemment et est disponible. En général, les soumissions sont restreintes aux quatre dernières années, sauf les ouvrages importants en évaluation des impacts environnementaux. L'affiliation universitaire de(s) auteur(s) est indiquée entre parenthèses à la fin de chaque référence.

1. Abele, F. (1982)
"A Framework for Mutual Benefit: Social and Political Research in the North." *Proceedings of the Fourth Northern Population Workshop, Committee on Northern Population Studies*, Frobisher Bay, Aug. 30 — Sept. 1, 1982, (Calgary).

2. Aitken, A.E. (1982)
Biophysical Processes on the Intertidal Flats of Pangnirtung Fiord, Baffin Island, N.W.T. M.Sc. Thesis. Kingston: Queen's University, Department of Geography, 229 pp., (Queen's).

3. Anderson, O.L. (1985)
Oil and Gas Conservation on Canada Lands. Calgary: Canadian Institute of Resources Law, 119 pp.

4. Andressen, B. (1982)
Social Impact Assessment and Planning, Canmore and the Winter Olympics. Master of Arts Thesis. Waterloo: University of Waterloo, School of Urban and Regional Planning, (Waterloo).

5. Armour A. (1981)
"The Issue of Adequacy in EIA." Presentation to one-day workshop on *A Guide to Commenting on Environmental Impact Assessments*, York University, Faculty of Environmental Studies, November, (York).

6. Armour, A. (ed.) (1981)
Issues in Environmental Impact Assessment. Downsview: York University, Faculty of Environmental Studies, (York).

7. Ayer, W.C., G.L. Brun, D.C. Eidt, W. Ernst, U.N. Mallet, R.A. Matheson and R.J. Silk (1984)
Persistence of Aerially Applied Fenitrothion in Water, Soil, Sediment, and Balsam Fir Foliage. Canadian Forestry Service, Information Report M-X-153, (Moncton).

8. Babin, R. et J.-G. Vaillancourt (1982)
Le mouvement écologiste et anti-nucléaire face aux gouvernements: le cas du débat public sur l'énergie au Québec et au Canada. Communication présentée au *2e Colloque sur la réforme et le changement en administration* publique à Montréal et publiée dans J.-G. Vaillancourt, (ed.), *Mouvement écologiste, énergie et environnement: essais d'écosociologie*. Montréal: Éditions Coopératives Albert Saint-Martin, p. 109-124, (Montréal).

9. Baker, D. (1982)
The Alaska Native Claims Settlement. Kingston: Queen's University, Eastern Arctic Study, Institute of Local Government, 100 pp., (Queen's).

10. Bankes, N.D. (1985)
The Assignment and Registration of Crown Mineral Interests. Calgary: Canadian Institute of Resources Law, 121 pp., (Calgary).

11. Bankes, N.D. and J.O. Saunders (eds.) (1985)
Public Disposition of Natural Resources. Calgary: Canadian Institute of Resources Law, 366 pp., (Calgary and CIRL).

12. Barton, B. (1985)
"Native Peoples and Water Resources." Presentation at the Rawson Academy of Aquatic Science's conference on *Canadian Waters: The State of the Resource*, Toronto, May, (CIRL).

13. Beanlands, G.E. (1981)
"Environmental Impact Assessment: A Concept at the Crossroads." Presentation to the *Conference on the Assessment of Environmental Impact*, sponsored by EXXON Corp., New York, December 2, 41 pp., (Dalhousie).

14. Beanlands, G.E. and P.N. Duinker (1981)
The Ecological Basis for Environmental Impact Assessment in Canada — Progress Report. Halifax: Dalhousie University, Institute for Resource and Environmental Studies, 110 pp., (Dalhousie and New Brunswick).

15. Beanlands, G.E. and P.N. Duinker (1982)
"Lessons from Ten Years of Offshore Impact Assessment." A paper presented to *West Coast Offshore Oil and Gas: Expectations and Opportunities*, Nov. 28-30, 1982, Vancouver, B.C., 28 pp., (Dalhousie and New Brunswick).

16. Beanlands, G.E. and P.N. Duinker (1982)
"Science and the Administration of Environmental Impact Assessment in Canada." A paper presented at *Environmental Concerns of the 80's: Environmental Government Affairs Seminar*, sponsored by Air Pollution Control Association, and Federation of Associations on the Canadian Environment, Ottawa, October 1982, 8 pp., (Dalhousie and New Brunswick).

17. Beanlands, G.E. and P.N. Duinker (1983)
Framework for an Ecological Environmental Impact Assessment in Canada. Final Report. Halifax: Dalhousie University, Institute for Resource and Environmental Studies; and Hull, Quebec: Federal Environmental Assessment Review Office, 133 pp., (Dalhousie and New Brunswick).

18. Beanlands, G.E. et P.N. Duinker (1983)
Un cadre écologique pour l'évaluation environnementale au Canada. Halifax: Dalhousie, Institute for Resource and Environmental Studies; et Hull, Québec, Bureau fédéral d'examen des évaluations environnementales, 144 p., (Dalhousie et Nouveau-Brunswick).

19. Beanlands, G.E. and P.N. Duinker (1984)
"Lessons From a Decade of Offshore Environmental Impact Assessment". *Ocean Management*, 9, 157-175, (Dalhousie and New Brunswick).

20. Beanlands, G.E. and P.N. Duinker (1986)
"The Significance of Environmental Impacts: An Exploration of the Concept." *Environmental Management*, 10, 1, 1-10, (Dalhousie and New Brunswick).

21. Berkes, F. (1982)
"Preliminary Impacts of the James Bay Hydroelectric Project, Quebec, on Estuarine Fish and Fisheries." *Arctic*, 35, 524-530, (Brock)

22. Berkes, F. (1985)
"Environmental Impact of Major Hydro Developments in Quebec: The James Bay Project." *Bulletin of Canadian Society of Environmental Biologists*, 42, 2, 43-50, (Brock).

23. Bird, C.R. (1985)
Planning and Managing Northern Hydroelectric EIA's. Master of Arts Thesis. Waterloo: University of Waterloo, School of Urban and Regional Planning, (Waterloo).

24. Blishen, B., A. Lockhart *et al.* (1979)
A Socio-Economic Impact Model for Northern Development. Ottawa: Department of Indian and Northern Affairs, 2 volumes, (York).

25. Blythe, J.M. (1983)
Moose River, an Unorganized Community in Northeastern Ontario: A Preliminary Report. Hamilton: McMaster University, Technology Assessment in Subarctic Ontario, Report Number 12, (McMaster).

26. Bone, R.M. and J. Pomeroy (1982)
"Socio-Demographic Field Surveying for the Norman Wells Database Study." Paper presented to the *Northern Population Workshop IV*, Frobisher Bay, August 1982, (Saskatchewan).

27. Bone, R.M. and M.B. Green (1983)
"The Norman Wells Energy Project: A Problem of Monitoring." In F. Duerden (ed.), *Applied Research in the Canadian North.* Toronto: Ryerson Polytechnical Institute, (Saskatchewan and Western Ontario).

28. Bone, R.M. and M.B. Green (1983)
"Jobs and Access — A Northern Dilemma." *Canadian Studies*, 18, 3, 90-101, (Saskatchewan and Western Ontario).

29. Bone, R.M. and M.B. Green (1984)
"The Northern Native Labour Force: A Disadvantaged Work Force." *The Operational Geographer*, 3, 12-14, (Saskatchewan and Western Ontario).

30. Bone, R.M. and M.B. Green (1985)
"The Norman Wells Energy Project: Establishment of Existing Socio-Economic Conditions." *Proceedings of International Workshop on Population Issues in Arctic Societies.* Copenhagen: Committee on Northern Population Research, May, (Saskatchewan and Western Ontario).

31. Bonn, F. *et al.* (1982)
"The Use of Landsat in Monitoring Resource Development in Canada." In P.J. Howarth *et al.*, *Landsat for Monitoring the Changing Geography of Canada.* Ottawa: Centre canadien de télédétection, pp. 65-84.

32. Boothroyd, P.D. (1979)
Review of Alberta's Social Impact Assessment Reports. Edmonton: Alberta Environment, (British Columbia).

33. Boothroyd, P.D. (1980)
Issues in Socio-economic Impact Assessment. Edmonton: Alberta Environment, (British Columbia).

34. Boothroyd, P.D. (1982)
Implications of Year-round Shipping through the Northwest Passage. Ottawa: Canadian Arctic Resources Committee (with W. Rees), (British Columbia).

35. Boothroyd, P.D. (1982)
The Keephills Experience: Case Study of an Environmental Impact Assessment. Edmonton: Alberta Environment, (British Columbia).

36. Boothroyd, P.D. (1982)
"Overview of Issues." In *Proceedings of the First National Conference on Social Impact Assessment*, (British Columbia).

37. Boothroyd, P.D. (1982)
Review of the Steering Committee Approach for Impact Management. Edmonton: Alberta Environment, (British Columbia).

38. Boothroyd, P.D. and W.E. Rees (1984)
"Impact Assessment From Pseudoscience to Planning Process: An Educational Response." *Impact Assessment Bulletin*, (British Columbia).

39. Bowden, M.A. (1981)
Exemptions within the Ontario Environmental Assessment Act, 1975. LL.M. Thesis. Toronto: York University, School of Law, (Saskatchewan).

40. Bowden, M.A. (1983)
"E.I.A. and Mineral Development." In Bartlett, R. (ed.), *Mining Law in Canada.* Law Society of Saskatchewan, (Saskatchewan).

41. Bowie, G.J. (1985)
Land Use Conflict in London's Rural-Urban Fringe: Case Study of Kilworth-Komoka 1964-1984. Master of Arts Thesis. London: Department of Geography, (Western Ontario).

42. Bowles, R.T. (1981)
Social Impact Assessment in Small Communities. Toronto: Butterworths, (Trent).

43. Bowles, R.T., (ed.) (1982)
Little Communities and Big Industries: Studies in the Social Impact of Canadian Resource Extraction. Scarborough, Ontario: Butterworths, (Trent).

44. Bowles, R.T. (1983)
"Family Wellbeing, Family Violence and Rapid Community Growth: An Ecological Perspective." In S. Yarie (ed.) *Proceedings of the Alaska Symposium on the Social, Economic and Cultural Impacts of Natural Resource Development.* Fairbanks: University of Alaska, pp. 146-152, (Trent).

45. Brizinski, P.M. (1983)
A Survey of Social Impact Assessment: Theory and Practice. Hamilton: McMaster University, Technology Assessment in Subarctic Ontario (McMaster).

Vol. I—*Public Policy and the SIA Process* (Report #7)
Vol. II—*Baseline Profiting* (Report #8)
Vol. III—*Projection, Assessment, and Evaluation* (Report #9)
Vol. IV—*Social Impact Assessment in the Canadian Northlands: An Introductory Appraisal* (Report #10)
Vol. V—*Bibliography* (Report #11)

46. Burton, I., R. McCullough, D. Fowle and R.E. Munn (1982)
Living with Risk: Environmental Risk Management in Canada. Toronto: University of Toronto, Institute for Environmental Studies, (Toronto).

47. Butler, R.W. (1982)
"Assessing the Impacts of Leisure Activities of Oil Industry Employees upon Local Communities." In *Proceedings: International Conference on Oil and the Environment*, A, 73-80, (Western Ontario).

48. Butler, R.W. (1983)
"The Implications of Offshore Oil and Gas Development." In R.J. Ricketts, (ed.), *Coastal Studies in Canadian Geography*, 2. Halifax: Saint Mary's University, (Western Ontario).

49. Butler, R.W. (1984)
"The Impact of Recreation on Rural Canada." In M.F. Bunce and M.J. Troughton (eds.), *Pressures of Change in Rural Canada*. Toronto: York University, Geographical Monograph 16, pp. 216-241, (Western Ontario).

50. Butler, R.W. (1984)
"Leisure Patterns of Oil Industry Employees in Alberta and Newfoundland: Comparisons and Contrasts." In T.L. Burton and J. Taylor (eds.), *Proceedings of the Third Canadian Congress on Leisure Research*. Edmonton: University of Alberta, pp. 335-350, (Western Ontario).

51. Butler, R.W. (1985)
"An Assessment of the Impact of the Hemlo Gold Mines on Marathon." Paper presented to the *International Association for Impact Assessment*, Calgary, September, (Western Ontario).

52. Butler, R.W. (1985)
"Planning Development to Avoid Potential Conflict." Paper presented to *Commonwealth Geographical Bureau Workshop*, Kuala Lumpur, May, (Western Ontario).

53. Butler, R.W. (1985)
"Tourism and Heritage Area Conservation." Paper presented to *National Parks Centennial Meetings*, Banff, September, (Western Ontario).

54. Butler, R.W. and M.J. Troughton (1985)
Public Access to Private Land. London: University of Western Ontario, (Western Ontario).

55. Byer, P. and J. Dooley (1982)
"Decision Analysis for Risk Management." In I. Burton and R. McCullough, (eds.), *Living with Risk: Environmental Risk Management in Canada*. Toronto: University of Toronto, Institute for Environmental Studies, (Toronto).

56. Carley, M. (1982)
"Lessons for Impact Monitoring." In *Impact Assessment Bulletin*, 1, 76-99, (British Columbia).

57. Carley, M. (1983)
"SIA: A Review of Selected Methods" and "A Decade of Social Indicator Research: Any Lessons for SIA?". In K. Finsterbusch, C.P. Wolf and L. Llewellyn (eds.), *Methods of Social Impact Assessment*. Los Angeles: Sage Publications, (British Columbia).

58. Carley, M. (1983)
"Socio-economic Monitoring for the Beaufort Region." A presentation to the *Beaufort Sea Environmental Assessment Panel*. Vancouver: School of Community and Regional Planning, University of British Columbia, (British Columbia).

59. Carley, M. (1984)
Cumulative Socio-economic Monitoring: Issues and Indicators for the Beaufort Region. Yellowknife: Government of the Northwest Territories; and Ottawa: Department of Indian Affairs and Northern Development, March, (British Columbia).

60. Carley, M. and E. Bustelo (1984)
Social Impact Assessment and Monitoring: A Cross Disciplinary Guide to the Literature. Boulder: Westview Press, (British Columbia).

61. Carrière, J. (s.d.)
Étude d'impact des lignes de transport énergétique sur l'évaluation foncière en milieu villégiature, Hydro-Québec, Direction environnement (UQAM).

62. Case, E.S., P.Z.R. Finkle and A.R. Lucas (eds.)(1984)
Fairness in Environmental and Social Impact Assessment Processes, Proceedings of a Seminar. Calgary: Canadian Institute of Resources Law, 121 pp., (CIRL and Calgary).

63. Christian, A.J. (1981)
"The Impact of Offshore Oil Production on the Construction Industry in Sparsely Populated Areas." A paper presented to the *3rd International Symposium on Organization and Management of Construction*, Dublin, June, (Memorial).

64. Christian, A.J. (1981)
An Introduction to the Impact of the Development and Production of Offshore Oil and Gas on the Newfoundland and Labrador Construction Industry. Paper No. 1, EAST Report. St. John's: Memorial University of Newfoundland, Faculty of Engineering and Applied Science, (Memorial).

65. Christian, A.J. (1982)
Construction Management, Construction Techniques and Other Related Impacts of Offshore Oil and Gas Developments. Paper No. 2, EAST report. St. John's: Memorial University of Newfoundland, Faculty of Engineering and Applied Science, (Memorial).

66. Colbo, M.H. (1984)
"Determining the *Bacillus thuringiensis* var. *israelensis* (Bti) Dosage Required for Practical Blackfly (Simuliidae) Control." Paper presented to *American Mosquito Control Association Meetings*, Toronto, (Memorial).

67. Colbo, M.H. (1985)
"Economic Entomology on the Northern Horizon." Paper presented to plenary symposium of the *Entomological Society of Canada Meetings*, Ottawa, September 23-25, (Memorial).

68. Colbo, M.H. and H. O'Brien (1984)
"A Pilot Blackfly (Diptera: Simuliidae) Control Program Using *Bacillus thuringiensis* var. *israelensis* in Newfoundland." *Can. Entomologist*, 116, 1085-1096, (Memorial).

69. Conway, C. (1982)
An End Use Energy Demand Model: Development and Policy Analysis Applications. Master of Environmental Studies. Toronto: York University, (York).

70. Couch, W.J., J.F. Herity, and R.E. Munn (1983)
"Environmental Impact Assessment in Canada." In *NATO Advanced Study Institute on Environmental Impact Assessment*. The Hague: M. Nijhoff, Pubs.; also Occasional Paper, No. 6, Federal Environmental Assessment Review Office, Hull, Quebec, 1981. (Toronto).

71. Craig, F. and F. Tester (1982)
"Indigenous Peoples: Reassuring Directions for SIA." In C. Geisler *et al.* (eds.), *Indian SIA: The Social Impact Assess-*

ment of Rapid Resource Development on Native People. Ann Arbor: University of Michigan, Natural Resources Social Research Laboratory, (Calgary).

72. Crowder, A.A. (1982)
"Impact Indices Based on Introduced Plant Species and Letter: A Study of Paths in St. Lawrence Islands National Park, Ontario, Canada." *Environmental Management*, (Queen's).

73. Curtis, F.A. (1981)
"Environmental Assessment in Ontario, Canada." *Journal of the Urban Planning and Development Division, American Society of Civil Engineers*, 107, UPI, 1-17, (Regina).

74. Curtis, F.A. (1982)
"A Checklist for the Writing and Presentation of Environmental Assessment (EA) Reports." *The Canadian Geographer*, 26, 1, (Regina).

75. Curtis, F.A. (1983)
"Environmental Assessment of Campeau Shopping Center." *Journal of Urban Planning and Development*, 109, 2, (Regina).

76. Curtis, F.A. (1983)
"Environmental Assessment for Local Private Projects." *Environments*, 15, 1, (Regina).

77. Curtis, F.A. (1983)
"An Environmental Assessment Procedure for Shopping Centres." *Urban Ecology*, 7, (Regina).

78. Curtis, F.A. (1983)
"Integrating Environmental Mediation into EIA." *Impact Assessment Bulletin*, 2, 3, 17-25, (Regina).

79. Curtis, F.A. and J. Amos (1979)
Issues in Environmental Assessment: EA Information Sources. Prepared for the Ontario Ministry of the Environment. Kingston: Queen's University, School of Urban and Regional Planning, 27 pp., (Regina).

80. Curtis, F.A. and T.S. Bakshi (1984)
"A Proposed Natural Resources Planning and Management Program by Home Study." *Distance Education*, 5, 1, September, (Regina).

81. Curtis, F.A. and M.A. Bowden (1985)
Environmental Impact Assessment. Athabasca: Athabasca University, 199 pp., (Regina and Saskatchewan).

82. Curtis, F.A. and I. Silkalns (1979)
Issues in Environmental Assessment: Public Participation in EA Preparation. Prepared for the Ontario Ministry of the Environment. Kingston: Queen's University, School of Urban and Regional Planning, 17 pp., (Regina).

83. Daborn, G.R. (1984)
"Environmental Considerations of Tidal Power." In M.W. Conley, and G.R. Daborn (eds.), *Energy Options for Atlantic Canada*. Halifax: Lorimer Press, (Acadia).

84. Daborn, G.R., G.C. Baker and M.J. Dadswell (1983)
"Environmental Consequences and Ameliorative Measures of the Annapolis Tidal Power Project." *Water Science Technology*, 16, pp. 297-299, (Acadia).

85. Daviault, P. (1982)
Évaluation des impacts associés à l'épandage aérien de phytocodes granulaires. Essai de maîtrise en environnement, Sherbrooke, Université de Sherbrooke (Sherbrooke).

86. Davidson, M. (1981)
Policy and Decision-making in the North: The Case of Lancaster Sound. Vancouver: University of British Columbia, School of Community and Regional Planning, (British Columbia).

87. Dembicki, H. (1983)
Monitoring of Northern Megaprojects: Missed Opportunities? A Case Study of the Norman Wells Oil Field Development and Pipeline Project. Masters Thesis. Vancouver: School of Community and Regional Planning, University of British Columbia, (British Columbia).

88. Desmarais, G., D. Clavet, et J.M.M. Dubois (1982)
Méthodologie d'identification et d'évaluation des zones sensibles: aspects physiques, dans Roche Associés, *Étude des répercussions environnementales, forages hauturiers d'exploration dans le Golfe du Saint-Laurent*. Québec, S.O.Q.U.I.P., 5 p.

89. Dewees, D.N. (1983)
"Instruments of Choice in Environmental Policy." *Economic Inquiry*, 21, 53-70, (Toronto).

90. Dewees, D.N. (1983)
"Regulating Environmental Quality." In D.N. Dewees (ed.), *The Regulation of Quality: Products, Services, Workplaces, and the Environment*. Toronto: Butterworths, (Toronto).

91. Dooley, J.E. (1982)
"Decision-making in Environmental Crisis Situations." In H.C. Kunreuther and E.V. Ley (eds.), *The Risk Analysis Controversy: An Institutional Perspective*. Berlin: Springer-Verlag, (Toronto).

92. Dooley, J.E. (1985)
"Risk and Environmental Management." In V.W. Maclaren and J.B. Whitney (eds.), *New Directions in Environmental Impact Assessment in Canada*. Toronto: Methuen, (Toronto).

93. Dooley, J.E. (1985)
"Risk Theory and the Environmental Assessment Process." In V.T. Covello *et al.* (eds.), *Environmental Impact Assessment, Technology Assessment, and Risk Analysis*. Berlin: Springer-Verlag, (Toronto).

94. Dooley, J.E. and P. Byer (1982)
"Decision-making and Risk Management." In I. Burton, C.D. Fowle and R.S. McCullough (eds.), *Living and Risks: Risk Management in Canada*. Toronto: Institute for Environmental Studies, University of Toronto, Environmental Monograph, (Toronto).

95. Dooley, J.E. and I. Burton (1983)
"Risk Assessment for the Transport of Hazardous Materials." In J.T. Rogers and D.V. Bates (eds.), *A Symposium on the Assessment and Perception of Risk to Human Health in Canada*. Toronto: Royal Society of Canada and Science Council of Canada, (Toronto).

96. Dooley, J.E. and J.D. Robinson (1982)
Nuclear Risk Management in Canada: An Examination of the

Ontario Royal Commission on Electric Power Planning. Toronto: Institute for Environmental Studies, University of Toronto, (Toronto).

97. Dorcey, A.H.J. (n.d.)
"Coastal Zone Management as a Bargaining Process." *Coastal Zone Management Journal*, (British Columbia).

98. Dorney, R.S. (1983)
"Predicting Environmental Impacts of Development Projects on Land Use." Seminar, University of Toronto, October 27-28, Toronto, 33 pp., (Waterloo).

99. Duerden, F. (1982)
"Socio-economic Impacts of Highway Construction in Northwest Canada." *Alaska Highway Symposium*, Ft. St. John, British Columbia, (Ryerson).

100. Duinker, P.N. (1983)
"The Prediction of Environmental Impacts: A Discussion Paper." Prepared for Federal Environmental Assessment Review Office, Hull, Quebec, (New Brunswick).

101. Duinker, P.N. (1983)
"Some Comments on the Scientific Basis of Environmental Impact Assessment." Paper presented at *Environmental Impact Assessment: Preparing and Presenting the Evidence*, 3-4 May, 1983, Toronto, Ontario, (New Brunswick).

102. Duinker, P.N. and G.E. Beanlands (1982)
"Environmental Impact Assessment Procedures in Canada: Improvements from a Scientific Perspective." Paper presented at *ICOE'82: Second International Conference on Oil and the Environment*, August, 1982, Halifax, Nova Scotia, (New Brunswick and Dalhousie).

103. Duinker, P.N. and G.E. Beanlands (1983)
"An Ecological Framework for Environmental Impact Assessment in Canada." *Geographical Inter-University Resource Management Seminars*, 13, 97-152, (New Brunswick and Dalhousie).

104. Duinker, P.N. et G.E. Beanlands (1983)
Écologie et évaluation environnementale, bibliographie annotée. Halifax, Dalhousie University, Institute for Resource and Environmental Studies; Hull, Québec, Bureau fédéral d'examen des évaluations environnementales, 44 p., (Nouveau Brunswick et Dalhousie).

105. Duinker, P.N. and G.E. Beanlands (1983)
Ecology and Environmental Impact Assessment: An Annotated Bibliography. Halifax: Dalhousie University, Institute for Resource and Environmental Studies; also Hull, Québec: Federal Environmental Assessment Review Office, 40 pp., (New Brunswick and Dalhousie).

106. Dumbrell, J. (1985)
"An Assessment of the Impact of the Hemlo Gold Mines on Marathon." Master of Arts Thesis, Department of Geography, (Western Ontario).

107. Duplessis, Y., J. Hétu et J. Piette (1982)
La protection juridique de l'environnement au Québec. Montréal, Les Éditions Thémis Inc., 707 p., (Montréal).

108. Eidt, D.C. and V.N. Mallet (1985)
"Accumulation and Persistence of Fenitrothion in Needles of Balsam Fir and Possible Effects on Abundance of *Neodiprion abietis* (Harris)." Accepted for publication in *Can. Entolomogist*, (Moncton).

109. Eidt, D.C., A.J. Sosiak and V.N. Mallet (1984)
"Partitioning and Short-term Persistence of Fenitrothion in New Brunswick (Canada) Headwater Streams." *Aut. Environ. Contam. Toxicol.*, 13, 43-52 (Moncton).

110. Elder, P.S. (1982)
"Project Approval, Environmental Assessment and Public Participation." *The Environmentalist*, 2, 55-71, (Calgary).

111. Elder, P.S. (1984)
"Environmental Impact Assessment in Alberta." *Alberta Law Review*, 23, 286 pp., (Calgary)

112. Elder, P.S. (1985)
"The Energy Resource Conservation Board's Social Impact Assessment Mandate." *Alberta Environmental Law Centre Newsletter*, 3,3 (Calgary).

113. Elder, P.S. (1985)
"Federal and Provincial Environmental Impact Assessment in Canada: The Slave River Project." Paper presented to *The International Association for Impact Assessment*, September, Calgary, Alberta, (Calgary).

114. Elder, P.S. (1985)
"The Federal Environmental Assessment and Review Process Guidelines Order." *Resources: The Newsletter of the Canadian Institute of Resources Law*, 13, (Calgary).

115. Elder, P.S. (in preparation)
"Environmental Impact Assessment in Canada: The Slave River Project." *Alberta Law Review* (Calgary).

116. Ellis, D.V. (1982)
"Kitsault, B.C. — Technical Communication in a Non-technical World." *Marine Pollution Bulletin*, 13, 3, 78-80, (Victoria).

117. Ellis, D.V. (1982)
"Ocean Disposal in British Columbia." *Oceans 82*, Marine Technology Society, pp. 1101-1106, (Victoria).

118. Ellis, D.V. and S.F. Cross (1982)
"A Protocol for Inter-Laboratory Calibrations of Biological Species Identifications (Ring Tests)." *Water Research*, 15, 1107-1108, (Victoria).

119. Ellis, D.V. and J.D. Popham (1983)
"Accidental Formation and Subsequent Disappearance of a Contaminated Beach." In A. MacLachlan and T. Erasmus (eds.), *Sandy Beaches as Eco-systems. Proceedings of the First International Symposium on Sandy Beaches, Port Elizabeth, South Africa, January 17-21, 1983*, pp. 719-726, (Victoria).

120. Emond, D.P. (1982)
"Environmental Law at the Limits of Incremental Development." In A. Lucas and P. Finkle (eds.), *Environmental Law in the 1980's: A New Beginning*. Calgary: Canadian Institute of Resources Law, (York).

121. Emond, D.P. (1983)
"Fairness and the Federal Environmental Assessment and

Review Process." In A. Lucas, P. Finkle, D. Marshall (eds.), *Fairness and Environmental and Social Impact Assessment.* Calgary: Canadian Institute of Resources Law, (York).

122. Emond, D.P. (1984)
"The Legal Framework of Environmental Assessment in Canada and the Application of the Legislation." In J.B.R. Whitney and V.W. MacLaren (eds.), *Environmental Impact Assessment: Current Approaches in the Canadian Context.* Toronto: Institute of Environmental Studies, University of Toronto, (York).

123. Feit, H.A. (1982)
"Protecting Indigenous Hunters: The Social and Environmental Protection Regime in the James Bay and Northern Quebec Land Claims Agreement." In C.C. Green, R. Green, D. Usner and P. West (eds.), *Indian SIA: The Social Impact Assessment of Rapid Resource Development on Native Peoples.* Ann Arbor: University of Michigan, Natural Resources Sociology Research Lab., Monograph #3, pp. 290-321, (McMaster).

124. Feit, H.A. (1984)
"Conflict Arenas in the Management of Renewable Resources in the Canadian North: Perspectives Based on Conflicts and Responses in the James Bay Region, Quebec." In Canadian Arctic Resources Committee (ed.), *National and Regional Interests in the North: Third National Workshop on People, Resources and the Environment North of 60°.* Ottawa: CARC, pp. 435-458, (McMaster).

125. Feit, H.A. (1985)
"The Power and the Responsibility: Implementation of the Wildlife Hunting Provisions of the James Bay and Northern Quebec Agreement." Paper presented to the conference on *The James Bay and Northern Quebec Agreement, Ten Years After*, November 14-15, 1985, Montreal, 28 pp., (McMaster).

126. Finkelstein, N.B. (1983)
Development of the Aggregate Industry in the London Metropolitan Area. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

127. Finkle, P.Z.R. and A.R. Lucas (eds.)(1982)
Environmental Law in the 1980s: A New Beginning, Proceedings of a Colloquium. Calgary: Canadian Institute of Resources Law, 233 pp., (Calgary).

128. FitzGibbon, J., T. O'Hara, J. Pomeroy and J. Richards (1982)
"Baseline Study of Meewasin Valley River Resource." Report for the Meewasin Valley Authority, July 1982, (Guelph and Saskatchewan).

129. FitzGibbon, J.E. and Bell (1982)
"Terrain Sensitivity for Road Development in Northern Saskatchewan." *Saskatchewan Geography*, 1, (Guelph).

130. Flynn, J.D. (1982)
"Development or Dependency: General Systems Approach to Unequal Relations Among Communities." *World Congress of Sociology*, Mexico, (Western Ontario).

131. Francis, G.R., A.P. Grima, H.A. Regier and T.H. Williams (1985)
"A Prospectus for the Management of the Long Point Ecosystem." *Great Lakes Fishery Commission Technical Report*, 43, (Waterloo and Toronto).

132. Freeman, M.M.R. (1982)
"An Ecological Perspective on Man-Environment Research in the Hudson and James Bay Region." *Naturaliste canadien, (Rev. Ecol. Syst.)*, 109, 955-963, (Alberta).

133. Freeman, M.M.R. (1982)
Contributor to: *Aboriginal/Subsistence Whaling (with special reference to the Alaska and Greenland fisheries).* Report of the cultural anthropology panel. Reports of the International Whaling Commission, Special Issue 4, pp. 35-49, (Alberta).

134. Frideres, J. (1984)
"Government Policy and Indian Natural Resource Development." *The Canadian Journal of Native Studies*, IV, 1, 51-66, (Calgary).

135. Frideres, J., J. DiSanto, U. Fleising and S. Goldenberg (1982)
"Community Participation Programmes: Implications of Organizational Structure for Implementation and Success." *Journal of General Management*, 7, 4 (Summer), (Calgary).

136. Frideres, J., J. DiSanto, S. Goldenberg and U. Fleising (1985)
"The Keephills Hamlet Relocation: Public Participation in a Major Resource Development." *Practicing Anthropology*, 7, 3, (Calgary).

137. Frideres, J., S. Goldenberg, J. DiSanto and U. Fleising (1985)
"The Mediation of Alienation in Energy Development: The Case of the Keephills Thermal Power Project." *Impact Assessment Bulletin*, 3,3, 52-60, (Calgary).

138. Frideres, J., S. Goldenberg, J. DiSanto and U. Fleising (1986)
"The Effects of Public Participation on Perceptions of Others in a Resource Development Project: A Test of Attribution Theory." Presented to the *Western Regional Science Association*, Laguna Beach, California, February 26 - March 1, (Calgary).

139. Gariépy, M. (1982)
L'étude des impacts de projets, programmes et politiques, et le système de planification, dans *Les nouvelles forces que façonnent l'aménagement du territoire.* Hull, Actes du congrès national, L.C.U., (Montréal).

140. Gariépy, M. (1983)
"Environmental Impact Assessment and Planning in the Energy Sector: The Case of the Province of Quebec." Communication of the *Annual Conference of the American Collegiate Schools of Planning*, San Francisco, October, (Montréal).

141. Garvey, M.T. (1985)
The W. D'Arcy McKeough Dam and Diversion: A Case Study and Model Application in Water Resource Management. Master of Arts Thesis, London: University of Western Ontario, Department of Geography, (Western Ontario).

142. Gibson, R.B. (1982)
Values, Interests and Preferences: Non-Factual Considerations in the Assessment of Beaufort Sea Hydrocarbon Production and Transportation Proposals. Ottawa: Beaufort Sea Alliance, (Waterloo).

143. Gibson, R.B. (1983)
"Addressing the Deficiencies of the Federal Environmental Assessment and Review Process." Panel paper presented at the *Conference on the Future of Environmental Impact Assessment in Canada*, Institute for Environmental Studies, University of Toronto, October 27, (Waterloo).

144. Gibson, R.B. and G. Patterson (1984)
"Environmental Assessment in Canada." *Environmental Information and Education*, 3, Canadian Special Issue, Fall, 230-252, (Waterloo).

145. Gilbert, R., A. Aitken and B. McLaughlin (1982)
A Biophysical Survey of Coastal Environments in the Vicinity of Nain, Labrador. Final report of research supported by Petro-Canada Exploration Inc. Kingston: Queen's University, Department of Geography, 124 pp., (Queen's).

146. Goldenberg, S. (1986)
"Organizational Responses to Issues Concerning the Delegation of Authority in Situations Involving Public Participation." *Culture*, 14, 1, 33-43, (Calgary)

147. Graham, K. (1982)
"Corporatism, Elite Accommodation and Pluralism: Approaches to Public Participation and Private Accountability in Northern Development." Presented to the *Atlantic Provinces Political Science Association*, October, (Carleton).

148. Graham, K. (1982)
The Development of the Polaris Mine. Kingston: Queen's University, Eastern Arctic Study, Institute of Local Government, 59 pp., (Carleton).

149. Graham, K., E. Moore, M.P.S. Brown and A. King (1982)
An Evaluation of Funding of Public Participation in the Beaufort Sea Environmental Assessment Panel Review. Prepared under contract to the Federal Environmental Assessment Review Office. Kingston: Queen's University, Institute of Local Government and Social Program Evaluation Group, (Carleton and Queen's).

150. Graham, K., M.P.S. Brown and M.J. Wojciechowski (1982)
Oil and Gas Development in the Beaufort Sea, Eastern Arctic Study Case Study Series. Kingston: Queen's University, Eastern Arctic Study, (Carleton and Queen's).

151. Green, M.B. (1983)
"A Principal Components Approach to Socio-Economic Impact Assessment of the Norman Wells Pipeline Project." Ottawa: Department of Indian and Northern Affairs, Office of the Northern Research and Science Advisor, Invited Lecture Series, March, (Western Ontario).

152. Green, M.B. and R.M. Bone (1983)
"The Norman Wells Energy Project: A Problem of Monitoring." Presented to the *6th Annual Applied Geography Conference*, Toronto, October, (Western Ontario and Saskatchewan).

153. Green, M.B. and R.M. Bone (1984)
Analysis of Rankings of Socio-Economic Impacts of the Norman Wells Pipeline Project. Ottawa: Department of Indian and Northern Affairs, DIAND Norman Wells Monitoring Report Series, Report 3-84, (Western Ontario and Saskatchewan).

154. Green, M.B. and R.M. Bone (1985)
"Analysis of Ranked Impacts of the Norman Wells Pipeline Project." Paper presented to the *Annual Meeting of International Association for Impact Assessment*, September, (Western Ontario and Saskatchewan).

155. Green, M.B. and R.M. Bone (1985)
"Measurement of Socio-Economic Impacts of a Mega Project: The Example of the Norman Wells Oil Development and Pipeline Project." *The Operational Geographer*, 6, 18-21, (Western Ontario and Saskatchewan).

156. Green, M.B. and R.M. Bone (1985)
"Measurement of Socio-Economic Impacts of a Mega Project: The Example of the Norman Wells Oil Development and Pipeline Project (Part Two-Discriminant Analysis)." *The Operational Geographer*, 7, 12-14, (Western Ontario and Saskatchewan).

157. Grigg, J. (1985)
The Implications of the Pan-Am Games for London. Master of Arts Thesis, London: University of Western Ontario, Department of Geography, (Western Ontario).

158. Grima, A.P. (1983)
"Analysing Public Inputs to Environmental Planning: A Summary and Discussion of Public Involvement in Great Lakes Management." In G.A. Daneke *et al.* (eds.), *Public Involvement and Social Impact Assessment*. Westview Press, pp. 111-120, (Toronto).

159. Grima, A.P. (1985)
"Environmental Risk Assessment and Community Impact Mitigation: An Exploratory Essay." Paper prepared for the *Workshop on the Application of Risk Assessment in EIA*, University of Toronto, Institute for Environmental Studies, April, 23 pp., (Toronto).

160. Grima, A.P. (1985)
"Participatory Rites: Integrating Public Involvement in Environmental Impact Assessment." In J.B.R. Whitney and V.W. Maclaren (eds.), *Environmental Impact Assessment: The Canadian Experience*. Toronto: University of Toronto Institute for Environmental Studies Monograph Series, 5, 33-51, (Toronto).

161. Grima, A.P., P. Timmerman, C.D. Fowle and P. Byer (1985)
Risk Assessment and EIA: Research Needs and Opportunities. Report to the Canadian Environmental Assessment Research Council, October, 48 pp., (Toronto).

162. Grzybowski, A. (in progress)
"A Human Ecological Approach to Environmental Assessment Based on Non-Equilibrium System Dynamics." M.A. Thesis, University of Waterloo, Department of Geography, (Waterloo).

163. Guay, L. (1982)
Les besoins humains: entre la nature et la culture, *De toute urgence*, vol. 13, n° 1, p. 3-43, (Laval).

164. Guay, L. (1982)
Satisfaction et trajectoire residentielle: commentaires, *Colloque de l'INRS-Urbanisation*, juin, (communication), (Laval).

165. Guertin, P.S. (1984)
"Landscape Transformation of Shorelines: An Evaluation Method Based on Their Resulting Spatial Structure." Presentation to the *Workshop on Tourism and Conservation in Rural Areas*, organized by Atlantic Centre for the Environment, Acadia University, June, (Laval).

166. Harding, J. (1984)
"A Content Analysis of Uranium Mining Transcripts." Presentation at the *Western Association of Sociology and Anthropology Conference*, 10-12 February, Regina, (Regina).

167. Harding, J. and I. Alesich (1983)
"Preliminary Findings on a Content Analysis of Uranium Mining Transcripts." Presentation at the *Human Context of Science and Technology Conference*, 17-20 May, Calgary, (Regina).

168. Harmsen, R. (1982)
"Pesticides and the Environment." *Proceedings of the Canadian Council of Resource and Environment Ministers Pesticide Workshop*, pp. 162-70 (Queen's).

169. Harvey, A.S., C.G. Macdonald, W.S. MacDonald, D.H. Elliot, S.M. Clark and K.S. Wood (1981)
Blueprint of Core Social Indicators. Halifax: Institute of Public Affairs, Dalhousie University, (Dalhousie).

170. Hawkins, F.R. and P. White (1985)
"Critique of the Hibernia Development Project Environmental Impact Statement on Assessment of Social Impacts." *Compendium of Comments Received on Technical Review of the Hibernia Development Project EIS*, (Memorial).

171. Hilts, S.G. (1982)
"Natural Areas of Provincial Significance." *Seasons*, 22, 2, 7-8, (Guelph).

172. Holisko, G. (1980)
The Environmental Assessment and Review Process: An Analysis of the Screening Phase. Vancouver: University of British Columbia, School of Community and Regional Planning, (British Columbia).

173. Holland, K. (1986)
"Evaluation of Cattle Herd Management Projects Among the Masai of Kenya." M.A. Thesis, Department of Anthropology, (McGill).

174. Holman, G.A. (1982)
Adjustments in Recreation Behaviour in a Modern Resource Town. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

175. House, D. (1983)
"Oil and Argentina: Community and Development in a Weak Regional Economy." A paper presented to the *8th International Seminar on Marginal Regions*, Gregynog, Wales, August, (Memorial).

176. Howe, D.A. (1984)
"Assessing the Impact of an Increase in the Atmospheric Concentration of Carbon Dioxide on Energy Consumption in Metropolitan Toronto." Master of Arts Research Paper, Department of Geography, (Toronto).

177. Hunt, C.D. (1985)
"A Critique of Land Use and Conservation in the Arctic." Presentation at the *Arctic Heritage Symposium*, Banff, August, (Calgary).

178. Hunt, C.D. and A.R. Lucas (1981)
Environmental Regulation — Its Impact on Major Oil and Gas Projects; Oil Sands and the Arctic. Calgary: Canadian Institute of Natural Resources Law, 167 pp., (Calgary).

179. Jaakson, R. (1985)
"Surveys in Environmental Impact Assessment." In J.B.R. Whitney and V.W. Maclaren (eds.), *Environmental Impact Assessment: The Canadian Experience*. Toronto: University of Toronto, Institute for Environmental Studies, (Toronto).

180. Jessen, S., J.C. Day and J.G. Nelson (1983)
"Assessing Land Use Regulations in Coastal Wetlands: The Case of Long Point, Lake Erie, Ontario." *Coastal Zone Management Journal*, 11, 1-2, 91-115, (Waterloo).

181. Johnston, D.M. and P. Finkle (1983)
Acid Precipitation in North America: The Case for Transboundary Cooperation. Calgary: Canadian Institute of Resources Law, 75 pp.

182. Joyal, R. (1983)
L'impact des emprises de lignes de transport hydroélectrique sur l'orignal. Rapport présenté à Hydro-Québec, février, (UQAM).

183. Joyal, R., Lamothe, P. et R. Fournier (1984)
L'utilisation des emprises de lignes de transport d'énergie électrique par orignal (*Alces alces*) en hiver, *Canadian Journal of Zoology*. 62, 260-266 (UQAM).

184. Kalin, M. (1982)
Environmental Conditions of Two Abandoned Uranium Mine Tailings Sites in Northern Saskatchewan. A Report submitted to Saskatchewan Environment, 94 pp., (Toronto).

185. Kalin, M. and C. Caza (1982)
"An Ecological Approach to the Assessment of Vegetation Cover on Inactive Uranium Mill Tailings Sites." *Proceedings, International Symposium on Management of Wastes from Uranium Mining and Milling*. Albuquerque: IAEA-SM-262/2, (Toronto).

186. Keefe, D. (1982)
Impact of Theme Parks on Community Development. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

187. Keller, C.P. (1982)
Tourism Potential and Limitations in the Western Arctic. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

188. Keogh, B. (1982)
L'impact social du tourisme : le cas de Shediac, Nouveau-Brunswick, *Le géographie canadien*, vol. 26, n° 4, p. 318-331, (Montréal).

189. Klein, J.L. et M. Dianne (1982)
L'aménagement intégré des ressources. Une alternative à la marginalité rurale, *Interventions économiques*, n°. 8, p. 85-89, (UQAC).

190. Knight, K.D. (1983)
Conceptual Ecological Modelling and Interaction Matrices as Environmental Assessment Tools with Reference to the Long Point Ecosystem, Lake Erie. Master of Arts Thesis, Department of Geography, (Waterloo).

191. Knight, K.D., C. Dufournaud and G. Mulamoottil (1984)
"Conceptual Ecological Modelling and Interaction Matrices as Environmental Assessment Tools in Coastal Planning." *Water Science and Technology*, 16, 559-567, (Waterloo).

192. Lamb, L. (1982)
Environmentally Sensitive Areas of Perth County. Stratford: Perth County Planning Office, (Waterloo).

193. Lang, R. and A. Armour (1980)
The Assessment and Review of Social Impacts. Ottawa: Federal Environmental Assessment Review Office, 163 pp., (York).

194. Lang, R. and A. Armour (1982)
Planning Land to Conserve Energy. Ottawa: Environment Canada, Lands Directorate, 212 pp., (York).

195. Lapierre, L.E. (1985)
"The Fall and Winter Food Habits of the Eastern Coyote *Canis latrans* Within the Sprayed Forest Southeastern New Brunswick." *Proc. N.S. Inst. Sci.*, 35, 127-130, (Moncton).

196. Lapierre, L.E. (1985)
"The Persistence of Fenitrothion Insecticide in Poplar *Populus tremuloides* and Gray Birch *Betula populifolia*." *Bull. Environ. Contam. Toxicol.*, 35, 471-475, (Moncton).

197. Legge, A.H. and J.C. Bogner (1982)
"Sulphur in Forests: An Application of Ecological Monitoring." In *Proceedings of the Symposium on Acid Emissions in Alberta and their Ecological Effects*, March 9-12, Edmonton, Alberta, 21 pp., (Calgary).

198. Lerner, S.C. (1982)
"Teaching Social Impact Assessment." Paper presented at the *International Conference on Social Impact Assessment*, Vancouver, October 24-27, (Waterloo).

199. Lerner, S.C. (1983)
"Social Impact Assessment: Where are We Going?" In A. Armour (ed.), *Issues in Environmental Impact Assessment*. Toronto: York University, Faculty of Environmental Studies, November (Waterloo).

200. Lerner, S.C. (1985)
"Choosing Outcomes: Impact Assessment in a Backcasting Context." Invited paper presented to *The International Association for Impact Assessment*, Utrecht, Netherlands, June (Waterloo).

201. Lucas, A.R. and J.O. Saunders (1983)
Canadian Electricity Exports: Legal and Regulatory Issues. Calgary: Canadian Institute of Resources Law, 40 pp., (Calgary and CIRL).

202. MacKintosh, E.E. and E.J. Mozuraitis (1982)
Agriculture and the Aggregate Industry — Rehabilitation of Extracted Sand and Gravel Lands to an Agricultural After-use. Toronto: Ontario Ministry of Natural Resources, Industrial Mineral Background Paper, 3, 44 pp., (Guelph).

203. Maclaren, V.W. (1983)
"A New Role for Simulation in Environmental Impact Assessment." *Modeling and Simulation* 14, Proceedings of the Fourteenth Annual Pittsburg Conference on Modeling and Simulation. Pittsburg: University of Pittsburgh, pp. 695-700, (Toronto).

204. Maclaren, V.W. (1983)
"Techniques and Methods for Assessing the Environmental Impacts of Megaprojects in Canada." A paper presented to the *China-Canada Conference*, McMaster University, Hamilton, November, (Toronto).

205. Maclaren, V.W. (ed.) (1985)
The Future of Environmental Impact Assessment in Canada: Selected Viewpoints. Toronto: University of Toronto, Department of Geography, Papers on Planning and Design, 33, (Toronto).

206. Maclaren, V.W. (1985)
"Multicriteria Evaluation Methods." In V.W. Maclaren and J.B.R. Whitney (eds.), *New Directions in Environmental Impact Assessment in Canada*. Toronto: Methuen, pp. 221-245, (Toronto).

207. Maclaren, V.W. and J.B.R. Whitney (1984)
"Assessing Social Impacts in an Energy-from-Waste Project." In *Facility Siting and Routing '84: Energy and Environment*. Ottawa: Environment Canada, pp. 624-644, (Toronto).

208. Maclaren, V.W. and J.B.R. Whitney (eds.) (1985)
New Directions in Environmental Impact Assessment in Canada. Toronto: Methuen, 245 pp., (Toronto).

209. Mallet, V.N. and A. Cassista (1984)
"Fenitrothion Residue Survey in Relation to the 1981 Spruce Budworm Spray Program in New Brunswick, Canada." *Bull. Environ. Contamin. Toxicol.*, 32, 66-75, (Moncton).

210. Mallet, V.N. and D.A. Leger (1985)
"Identification of Several Degradation Products of Aminocarb in Water." *XVII Eastern Canadian Workshop on Pesticides*, Ottawa, May, (Moncton).

211. Marsh, J. (1983)
"Environmental Impact Assessment in National Parks." *Park News*, 18, 1, 2, (Trent).

212. Marshall, D. (1985)
Geographical Perspective on Land Use and Planning: A Case of Noxious Interim Land Use. M.A. Thesis. Waterloo: University of Waterloo, Department of Geography, (Waterloo).

213. Martinez, D. (en cours)
La géographie médicale dans la planification des systèmes de santé, Thèse de doctorat, Département de géographie, (Montréal).

214. May, B.K. (1984)
"The Rail Transportation of Dangerous Commodities in the Toronto Census Metropolitan Area: Further Study on the Assessment and Management of Risk." Master of Arts Research paper, University of Toronto, Department of Geography, (Toronto).

215. McAllister, A.B. (1982)
Mineral Exploration in the Baker Lake Area. Kingston: Queen's University, Eastern Arctic Study, Institute of Local Government, 58 pp., (Queen's).

216. McLellan, A.G. (1982)
"The Environmental Planning Process in the 80's in Ontario." Paper presented to the *Good Roads Association*, Annual Conference, Toronto, February, (Waterloo).

217. McLellan, A.C. (1983)
"Pits and Quarries: Their Land Impacts and Rehabilitation." In *Stress on Land*. Ottawa: Environment Canada, pp. 180-226, (Waterloo).

218. McLellan, A.G. (1985)
"Government Regulatory Control of Surface Mining Operations: New Performance Guidelines Models for Progressive Rehabilitation." *Landscape Planning*, II, 15-28, (Waterloo).

219. McLellan, A.G. and D.H. Marshall (1984)
"Coping with Environmental Impacts of Less Compatible Land Uses." Paper presented to *Canadian Association of Geographers Meeting*, Nanaimo, British Columbia, May, (Waterloo).

220. McPhee, M.W. (1982)
Legislative and Administrative Options for Establishing Mariculture Management Areas on the Coast of British Columbia. University of British Columbia, Westwater Research Centre, Working Paper, (British Columbia).

221. McPhee, M.W. (1982)
"Planning for Offshore Oil and Gas Development: The B.C. Perspective." In *Proceedings of the West Coast Offshore Oil and Gas Conference*. Vancouver, British Columbia, November, (British Columbia).

222. McPhee, M.W. and J. Schweithelm (1983)
"Onshore Effects of Offshore Oil and Gas Development." In J.T.E. Gilbert (ed.), *Technical Guidelines for Offshore Oil and Gas Development*. Hawaii: Environment and Policy Institute, East-West Center, (Pennwell Books), (British Columbia).

223. Mendel, J.A. (1984)
Privatisation of Ontario Provincial Parks. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

224. Michalenko, G. (1982)
"Conducting Environmental Assessments and Using Mock Hearings as Teaching Techniques in Environmental Assessment Education." Paper presented to the *First International Symposium on Social Impact Assessment*, Vancouver, British Columbia, October, (Waterloo).

225. Michalenko, G. and R. Suffling (1982)
"Social Impact Assessment in Northern Ontario, the Reed Paper Controversy." In C. Geisler *et al.* (eds.), *The Social Impact of Rapid Resource Development on Native Peoples*. Ann Arbor: University of Michigan Press, (Waterloo).

226. Migneron, J.-G. (1982)
Évaluation du bruit de la circulation automobile dans les logements situés en bordure des autoroutes urbaines. Québec, Université Laval, CRAD, 183 p., (Laval).

227. Migneron, J.-G. (1982)
Impact psychologique et économique du bruit des autoroutes urbaines pour les secteurs résidentiels les plus proches. Québec, Université Laval, CRAD, 112 p., (Laval).

228. Miller, A. (1982)
"Psychosocial Factors in Environmental Problem Solving." *Environmental Management*, 6, 535-541, (New Brunswick).

229. Miller, A. (1982)
"Tunnel Vision in Environmental Management." *Environmentalist*, 2, 223-231, (New Brunswick).

230. Miller, A. (1983)
"The Influence of Personal Biases on Environmental Problem-Solving." *J. Env. Management*, 17, 133-142, (New Brunswick).

231. Miller, A. (1983)
"Integrated Pest Management: Psychosocial Factors." *Protection Ecology*, 253-267, (New Brunswick).

232. Miller, A. (1984)
"Professional Collaboration in Environmental Management." *J. Env. Management*, 16, 365-388, (New Brunswick).

233. Miller, A. (1984)
"Professional Competence in Environmental Management." *Int. J. Env. Studies*, 22, 91-101, (New Brunswick).

234. Miller, A. (1984)
"Professional Dissent and Environmental Management." *The Environmentalist*, 4, 143-152, (New Brunswick).

235. Miller, A. (1985)
"Cognitive Styles and Environmental Problem Solving." *Int. J. Env. Studies*, 26, 21-31, (New Brunswick).

236. Miller, A. (1985)
"Ideology and Environmental Risk Management." *The Environmentalist*, 5, 21-30, (New Brunswick).

237. Miller A. (1985)
"Psychosocial Origins of Conflict Over Pest Control Strategies." *Agriculture, Ecosystems and Environment*, 12, 235-251, (New Brunswick).

238. Miller, A. (1985)
"Technological Thinking: Its Impact on Environmental Management." *Environmental Management*, 9, 179-190, (New Brunswick).

239. Miller, A. and W. Cuff (1985)
"The Delphi Approach to Environmental Mediation." Accepted for publication in *Environmental Management*, (New Brunswick).

240. Mitchell, B. (1983)
"Environmental Impact Assessment in Canada: Issues,

Responses and Opportunities." In R.L. Gentilcore (ed.), *China in Canada: A Dialogue on Resources and Development*. London: McMaster University, Department of Geography, 244-257, (Waterloo).

241. Moir, J. (1984)
Wetland Land Use Conflicts in Southern Ontario. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

242. Moody, R.P., P. Weinberger and R. Greenhalgh (1983)
"The Determination of Potential Phytotoxicity of Environmental Pollutants Using a Rapid Assay Technique." *Can. Tech. Rep. Fish. Aquatic Sci.*, pp. 93-104, (Ottawa).

243. Morrison, K., N. Thérien and G. Spiller (1982)
"A Dynamic Model of Aquatic Plant Growth." In *Simulating the Environmental Impact of a Large Environmental Hydroelectric Project*. Simulation Councils Proceedings Series, 9, 2, 99-118, (UQAM).

244. Muller, R.A. and P.J. George (1982)
Evaluating the Environmental Impact of Hydroelectric Development in Northern Ontario: A Preliminary Report. Hamilton: McMaster University, Technology Assessment in Subarctic Ontario, Report Number 1, (McMaster).

245. Muller, R.A. and P.J. George (1983)
Optimal Expansion of Hydroelectric Capacity in Northern Ontario. Hamilton: McMaster University, Technology Assessment in Subarctic Ontario, Report Number 6, (McMaster).

246. Munn, R.E. (1979)
Environmental Impact Assessment: Principles and Procedures. SCOPE 5. Chichester: John Wiley and Sons, (Toronto).

247. Munn, R.E. (1982)
"Environmental Impact Assessment: A Useful Development Tool." *Mazingira*, 6, 6, (Toronto).

248. Munn, R.E. (1983)
"The Atmospheric Content of EIAs." In *NATO Advanced Study Institute on Environmental Impact Assessment*. The Hague: M. Nijhoff Pubs., (Toronto).

249. Munn, R.E. (1983)
"The Theory and Application of Modelling in EIAs." In *NATO Advanced Study Institute on Environmental Impact Assessment*. The Hague: M. Nijhoff Pubs., (Toronto).

250. Nadeau, R. (1982)
Impact du tourisme de villégiature sur l'environnement, dans R. Nadeau (éd.), *Le tourisme, aspects théorétiques et pratiques au Québec*. Montréal, Ed. Solidis, p. 135-165. (Sherbrooke).

251. Nelson, J.G. and S. Jessen (1981)
Scottish and Alaskan Offshore Oil and Gas and the Canadian Beaufort Sea. Ottawa: Canadian Arctic Resources Committee and University of Waterloo, Faculty of Environmental Studies, (Waterloo).

252. Nelson, J.G., J.C. Day and S. Jessen (1982)
"Regulation for Environmental Protection: The Nanticoke Industrial Complex, Ontario, Canada." *Environmental Management*, 5, 5, 385-395, (Waterloo).

253. Nelson, J.G. and S. Jessen (1982)
"Applicability of the Scottish and Alaskan Offshore Oil and Gas Experience to the Canadian Beaufort Sea." *Coastal Studies in Canadian Geography*. No. 1. Halifax: St. Mary's University, pp. 60-64, (Waterloo).

254. Nelson, J.G. and S. Jessen (1982)
"Managing Petroleum Development in the Shetland Islands, Alaska's North Slope, and Canada's Beaufort Sea." Occasional Paper 19. Vancouver: The Centre for Human Settlements, University of British Columbia, (Waterloo).

255. Nelson, J.G. and J. King (1983)
"Evaluating the Federal Environmental Assessment and Review Process with Special Reference to South Davis Strait, Northern Canada." *Environmental Conservation*, 10, 4, 293-301, (Waterloo).

256. Nesbitt, T. (1982)
Northern Assessment: A Play Within a Play. Master of Environmental Studies Thesis. Downsview: York University, Faculty of Environmental Studies, (York).

257. Newkirk, R.T. (1983)
"Objective Evaluation of Visual Values." Chapter 4 in R.D. Rowe and L.G. Chestnut (eds.), *Managing Air Quality and Scenic Resources at National Parks and Wilderness Areas*. Westview Press, (Waterloo).

258. Newkirk, R.T. (1985)
"Discrete Systems Simulation in Resource Management Problems." In *Papers of the Canadian-Polish Seminar on Systems Approaches to Regional Studies*. Waterloo: University of Waterloo, (Waterloo).

259. Nobert, M. (1985)
Les pluies acides dans le nord-ouest québécois, dans la région de la Baie de James: Études sur le transfert atmosphérique des polluants acidifiants, Mémoire de maîtrise, Département de géographie, (Montréal).

260. Norton, M. (1982)
Communicative Competence for Nuclear Power Policy Intervention. A major paper for the degree of Master in Environmental Studies. Downsview: York University, Faculty of Environmental Studies, (York).

261. O'Rielly, K. (1985)
An Evaluation of the Territorial Land Use Regulations as a Land Management Tool in the Yukon. Master of Arts Thesis. Waterloo: University of Waterloo, School of Community and Regional Planning, (Waterloo).

262. Olynyk, J. (1984)
Effects of EIA on Project Planning by Oil and Gas Companies. Master's Thesis. Vancouver: University of British Columbia, School of Community and Regional Planning (British Columbia).

263. Parenteau, R. et A. Benoit (1984)
Les intervenants aux audiences publiques sur l'environnement, au Québec, Rapport de recherche, Montréal, Université de Montréal, Institut d'Urbanisme, juillet, (Montréal).

264. Parenteau, R., Benoit, A. et R. Bergeron (1985)
La participation du public aux audiences publiques sur

l'environnement, Rapport de recherche, Montréal, Université de Montréal, Institut d'Urbanisme, août, (Montréal).

265. Parker, G.R. (1982)
Contribution to: *Venture EIS — Aesthetic Environment Final Report*. Prepared by Hardy Associates (1978), Calgary, for Mobil Oil Canada Ltd., Section 3.4, (NSCAD).

266. Pearce, C.M. *et al.* (1983)
Remote Sensing for Monitoring Alberta's Mixedgrass Prairie Rangelands: A User's Guide. Edmonton: Alberta Remote Sensing Centre, Publication No. 83-2 (Reprinted 1984), 8 pp., (Western Ontario).

267. Pearce, C.M. (1985)
An Evaluation of Landsat Archival Imagery to Monitor Landuse Changes in Southern Alberta. Edmonton: Alberta Remote Sensing Centre, Research Contract 84-1276, 50 pp. (Western Ontario).

268. Pearce, C.M. and L.D. Cordes (1985)
Vegetation Colonization on the Mackenzie River Delta, N.W.T. Vancouver: B.C. Hydro, Research Contract, 390 pp., (Western Ontario).

269. Pederson, C. (1982)
Post Construction Study of the Shakwak Highway Environmental Assessment Review. Master of Environmental Design Thesis. Calgary: University of Calgary, Faculty of Environmental Design, (Calgary).

270. Pelletier, P. (1983)
Étude d'impact visuel de l'extension du port de Québec. Essai de maîtrise. Ste-Foy, Centre de recherches en aménagement et en développement, Université Laval, (Laval).

271. Perry, W. (1982)
An Analysis of Manitoba's Environmental Assessment and Review Process. Master of Natural Resources Management Thesis. Winnipeg: University of Manitoba, Natural Resources Institute, (Manitoba).

272. Pinkerton, E. (1983)
"All You Ever Wanted to Know About Oncorhychian Oligopsony". Paper presented, Department of Anthropology, University of California, October, (British Columbia).

273. Plumstead, A.G. (1984)
An Added Dimension to Lake Planning on Lake Temagami. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

274. Pomeroy, J., M. Green and J. FitzGibbon (1982)
"Evaluation of Urban Riverscape Aesthetics." Paper presented at the meetings of the *Canadian Association of Geographers*, Ottawa, (Saskatchewan, Western Ontario and Guelph).

275. Poulin, A. (1981, 1982)
Les routes et l'environnement (étude préliminaire): Cahier 1: 84 p. (1981); Cahier 2: 131 p. (1982); Rapports pour le Ministère des Transports du Québec, non publié, (Sherbrooke).

276. Poulin, A. (1982)
L'évaluation des impacts des lignes de haute tension. Rapport au Conseil régional de développement de l'Estrie, Sherbrooke, Université de Sherbrooke, Institut d'aménagement, 6 p., (Sherbrooke).

277. Preston, R.J. (1983)
Algonquin People and Energy Development in the Subarctic. Hamilton: McMaster University, Technology Assessment in Subarctic Ontario, Report No. 4, (McMaster).

278. Priddle, G. (1986)
"Socio-economic Impact of Protected Areas in Coastal Zones." I.U.C.N., (Waterloo).

279. Pushchak, R. (1984)
"The Political and Institutional Context of Environmental Impact Assessment in Ontario." In J.B.R. Whitney and V.W. Maclaren (eds.), *Environmental Impact Assessment: Current Approaches in the Canadian Context*. Toronto: University of Toronto, Institute for Environmental Studies, (Ryerson).

280. Pushchak, R. (in preparation)
"Methods of Measuring Benefits in Risk Assessment." In R.E. Munn (ed.), *The Application of Risk Assessment Principles to EIA in Canada*. Toronto: University of Toronto, Institute for Environmental Studies, (Ryerson).

281. Pushchak, R. and I. Burton (1984)
"The Status and Prospects of Risk Assessment." *Geoforum*, 17, 3, (Ryerson).

282. Pynn, G.A., D.B. Stewart and J.W. Hylton (1985)
The Response of Newfoundland Small Business to Offshore Development: An International Comparison. Report prepared for the Department of Development and Tourism, Government of Newfoundland and Labrador, July, (Memorial).

283. Rees, W.E. (1980)
"Environmental Assessment and Review: The Case of McKinley Bay." *Northern Perspectives*, 8, 2, 2-10, (British Columbia).

284. Rees, W.E. (1981)
"Environmental Assessment and the Planning Process in Canada." In S.D. Clark (ed.), *Environmental Assessment in Australia and Canada*. Vancouver: Westwater Research Centre, University of British Columbia, pp. 3-38, (British Columbia).

285. Rees, W.E. (1983)
Government Management Capability. A Brief to the Beaufort Sea Environmental Assessment Panel. Vancouver: School of Community and Regional Planning, University of British Columbia, (British Columbia).

286. Regier, H.A. and J.E. Paloheimo (1982)
"Ecological Approaches with Multi-Species Resources in Multiple-use Situations in Multi-stressed Freshwater Ecosystems." In M.C. Mercer (ed.), *Proceedings of a Workshop on Multi-Species Approaches to Fisheries Management, St. John's Newfoundland, November 1979*, Canadian Fisheries and Aquatic Sciences, pp. 127-132, (Toronto).

287. Ricketts, P. (ed.) (1982)
Marine and Coastal Studies in Geography. Published by Saint Mary's University on behalf of the Marine Studies and Coastal Zone Management Specialty Group of the Canadian Association of Geographers, (St. Mary's).

288. Rigby, B. (1982)
Environmental Impact Assessment and the Need for Environmental Monitoring. Master's Thesis. Ottawa: Carleton University, Department of Geography, 78 pp.

289. Rigby, B. (1983)
"Environmental Research Activity in Canada." A paper presented to *Environmental Impact Assessment: Preparing and Presenting the Evidence*, a Corpus/Ecolog Seminar, May 3, 13 pp.

290. Rigby, B. (1983)
"New Directions in Environmental Assessment: The Need for Post-Development Audits." A paper presented to *New Directions in Environmental Impact Assessment: The Canadian Experience*, October 28, Institute for Environmental Studies, University of Toronto.

291. Rigby, B. (1985)
"Post-Development Audits in Environmental Impact Assessment." Chapter 8 in V.W. Maclaren and J.B.R. Whitney (eds.), *New Directions in Environmental Impact Assessment in Canada*. Toronto: Methuen.

292. Ripley, E.A. and R.E. Redmann (1982)
Environmental Impact of Mining in Canada. Kingston: Queen's University, Centre for Resources Studies, (Saskatchewan).

293. Roberts, L. (1982)
"Inuit Responses to Extensive Wage Employment." *Social Impact Assessment*, (Manitoba).

294. Rounds, R.C. (1982)
"Land Use Changes in the Minnedosa Pot Hole Region of Southwestern Manitoba 1948-1970." *Blue Jay*, 40, 1, 6-12, (Brandon).

295. Rounds, R.C. (1982)
"Riding Mountain National Park: A Bed of Roses or a Thorn in the Side." *Outdoor Canada*, 10, 5, 26-31, (Brandon).

296. Salisbury, R.F., M. Mayer-Renaud, et A. LeDoyen (1982)
Le rôle de l'expert dans la négociation, (McGill).

297. Sasseville, J.L., J. Décarie et G. Breton (1981)
La gestion des grands projets et l'évaluation environnementale: Le cas du projet Archipel, Québec, INRS-Eau, Université du Québec, 115 p., (INRS-Eau).

298. Sayer, R. (1982)
A Sensitivity Mapping Scheme Based on Ecological Land Surveys: Case Study Wood Buffalo National Park. Master of Arts Thesis. Ottawa: Carleton University, Department of Geography, (Carleton).

299. Schneider, R. (1984)
The Formation of Attitudes to Development in Southern Labrador. PhD Thesis. Montreal: McGill University, Department of Anthropology, (McGill).

300. Semchuk, B. (1982)
An Assessment of the Environmental Impact of Drought on Waterfowl in Agro-Manitoba and Recommendations for Mitigation Measures. Master of Natural Resources Management Thesis. Winnipeg: University of Manitoba, Natural Resources Institute, (Manitoba).

301. Serafin, R. (1986)
"Attitudes to Hazardous Waste Facility Siting in Niagara Falls." Master of Science Research Paper, University of Toronto, Department of Geography, (Toronto).

302. Sérodes J.B. (1980)
Méthodologie d'étude des impacts physiques sur les estuaires des rivières nordiques du Québec à la suite de leur aménagement hydro-électrique, Rapport à Hydro-Québec, Québec, Université Laval, Département de génie civil, (Laval).

303. Sérodes, J.B. (1982)
Le phénomène de la sédimentation sur les battures de l'estuaire moyen du Saint-Laurent, Mémoire au Conseil consultatif de l'environnement, La Pocatière, 26 février, (Laval).

304. Sérodes, J.B., J.P. Troude, M. Dubé et J. Deschênes (1982)
Acquisition de données de base sur les processus sédimentaires et le pouvoir de transformation des zones intertidales de l'estuaire moyen du Saint-Laurent, Rapport à Environnement Canada, Québec, Université Laval, Département de génie civil, (Laval).

305. Sewell, W.R.D. (1979)
"Public Participation: Towards an Evaluation of Canadian Experience." In B. Sadler (ed.), *Involvement and Environment, Proceedings of the Canadian Conference on Public Participation.* Edmonton: Environment Conservation Authority of Alberta, 2, 205-224, (Victoria).

306. Sewell, W.R.D. (ed.)(1979)
Where is Public Participation Going: An Annotated Bibliography Focusing on Canadian Experiences. Edmonton: Environment Council of Alberta, 146 pp., (Victoria).

307. Sewell, W.R.D. (1981)
"The Process is the Product." In B. Sadler (ed.), *Public Participation in Environmental Decision-making.* Edmonton: Environment Council of Alberta, pp. 161-165, (Victoria).

308. Sewell, W.R.D. and H.D. Foster (1982)
An Assessment of Canadian Environmental Policies on Offshore Development. Ottawa: Environment Canada, 50 pp., (Victoria).

309. Shemilt, L.W. and G. Sheng (1983)
"Evaluation of the Canadian Nuclear Fuel Waste Management Program: The Role of Assessment and Standards." Paper presented at the *97th Congress of the Engineering Institute of Canada*, April 26, (McMaster).

310. Shemilt, L.W. and G. Sheng (1983)
"An Overview of Nuclear Waste Management." *Energy, Exploration and Exploitation*, 2, 1, (McMaster).

311. Shemilt, L.W. and G. Sheng (1984)
"High-Level Nuclear Waste Disposal — Technical, Social, Ethical Aspects." Brief submitted to the *Interfaith Program for Public Awareness of Nuclear Issues*, Toronto, October 29, (McMaster).

312. Sheng, G. (1984)
Occupational Hazards of Tritium in the Canadian Fusion Program. Report submitted to the Ontario Ministry of Energy, (McMaster).

313. Sheng, G. and L.W. Shemilt (1983)
"An Overview of the Canadian Nuclear Fuel Waste Management Program." A paper presented at the *AAAS Annual Meeting*, Detroit, Michigan, (McMaster).

314. Simmons, N.K. (1982)
An Analysis of the Effectiveness of the Manitoba Environmental Assessment and Review Process. Master of Natural Resources Management Thesis. Winnipeg: University of Manitoba, Natural Resources Institute, (Manitoba).

315. Singh, B. et M. Nobert (1982)
Variations spatiotemporelles dans pluies acides par rapport aux conditions météorologiques, *Eau du Québec*, vol. 15, nº 4, p. 350-355, (Montréal).

316. Singh, B. and M. Nobert (1983)
"Ambient Air Concentrations of Asbestos Fibres Dust Content and Mortality: The Case of Asbestos, Quebec." *Ecology of Disease*, 2, 4, 343-351, (Montréal).

317. Singh, B. and J.-P. Thouez (1985)
"Ambient Air Concentrations of Asbestos Fibres Near the Town of Asbestos, Quebec." *Environmental Research*, 35, 144-159, (Montréal).

318. Smith, B. (1982)
Evaluation of Public Participation in Practice. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

319. Smith, D.C. (1982)
Implications of Offshore Oil Development on Recreation Planning in Newfoundland. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

320. Smith, K. (1985)
Northern Highways and Tourist Development. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

321. Smith, L.G. (1982)
"Mechanisms for Public Participation at a Normative Planning Level in Canada." *Canadian Public Policy*, 8, 4, 561-572, (Western Ontario).

322. Smith, L.G. (1983)
"Alternative Mechanisms for Public Participation in Environmental Policy Making." *Environments*, 14, 3, 21-34, (Western Ontario).

323. Smith, L.G. (1983)
"Electric Power Planning in Ontario." *Canadian Public Administration*, 26, 3, 360-377, (Western Ontario).

324. Smith, L.G. (1983)
"The Evaluation of Public Participation in Water Resources Management: A Canadian Perspective." In J.W. Frazier (ed.), *Proceedings of the 6th Annual Applied Geography Conference*. Binghampton, New York: State University of New York, pp. 235-244, (Western Ontario).

325. Smith, L.G. (1983)
"Land Use Policy in Canada's North." Discussant's Remarks presented at the *Regional Planning and Land Use Planning Workshop, Canadian Arctic Resources Committee's Third National Workshop on People, Resources and the Environment North of 60*, Yellowknife, N.W.T., June 1-3, (Western Ontario).

326. Smith, L.G. (1984)
"Attitudes to Public Participation: Canadian Experience." Paper presented to the *Special Session on Values and Behaviour in Resources and Environmental Decision-making, Canadian Association of Geographers Annual Meeting*, Nanaimo, British Columbia, May 21-24, (Western Ontario).

327. Smith, L.G. (1984)
Institutional Arrangements for Electric Power Planning. Waterloo: Wilfrid Laurier University, Research Paper Series No. 8472, (Western Ontario).

328. Smith, L.G. (1984)
"Public Participation in Policy Making: The State of the Art in Canada." *Geoforum*, 15, 2, 253-260, (Western Ontario).

329. Smith, L.G. (1985)
"Reforming Environmental Assessment in Northern Canada." Waterloo: Wilfrid Laurier University, Research Paper Series (forthcoming), (Western Ontario).

330. Smith, L.G. and T. Brough (1984)
"Environmentally Sensitive Area Studies in Ontario, 1975-1982: A Review and Content Analysis." Paper presented to the *Special Session on Environmental Impact Assessment, Canadian Association of Geographers Annual Meeting*, Nanaimo, British Columbia, May 21-24, (Western Ontario).

331. Smith, L.G. and T. Brough (1985)
"A Review and Content Analysis of Studies: Environmentally Sensitive Areas in Ontario, 1975-1982." *Environments*, 17, 1, 9-17, (Western Ontario).

332. Smith, L.G. and T. Fenge (1985)
"Reforming Environmental Assessment in Northern Canada: Recent Revisions and Continuing Concerns." Paper presented to the *Special Session on Environmental Impact Assessment, Canadian Association of Geographers Annual Meeting*, Trois-Rivières, Québec, May 27-31, (Western Ontario).

333. Smith, L.G., and D.A. Frentess (1983)
Orphan Roads: The Problem of Non-Designated Access Roads in Northern Ontario. Report submitted to the Ontario Ministry of Northern Affairs, 109 pp., (Western Ontario).

334. Soubeyran, D. et M. Gariépy (1984)
Quelques aspects de la planification environnementale des espaces urbanisés au Québec, Recueil sur les nouvelles avenues de recherche urbaine pour Forum de l'Association française de développement de la géographie, (Montréal).

335. Sperling, L. (1986)
"Social Impacts of Group Ranch Projects in Kenya." PhD Thesis, Department of Anthropology, (McGill).

336. Spicer, W.W. (1984)
Canadian Maritime Law and the Offshore: A Primer. Calgary: Canadian Institute of Resources Law, 65 pp.

337. Storey, K. (1980)
Northern Peninsula Socio-Economic Impact Study. Volume I: *Background and Socio-Economic Profiles*. Volume II: *Impact Assessments and Conclusions*. Report prepared for the Department of Regional Economic Expansion, St. John's, Newfoundland. St. John's: Memorial University of Newfoundland, 449 pp., (Memorial).

338. Storey, K. (1980)
"Offshore Oil: Regional Impacts for the Avalon Peninsula," in *Proceedings of the Offshore Environment in the 80s Workshop on Environmental Consideration of East Coast Offshore Hydrocarbon Development*, December 20, 1980, St. John's (Memorial).

339. Storey, K. (1980)
Socio-Economic Impacts of Offshore Oil and Gas Developments: A Selected Bibliography with Particular Reference to Newfoundland and Labrador. Prepared with a grant from Mobil Oil Canada Ltd. St. John's: Memorial University of Newfoundland, 146 pp., (Memorial).

340. Storey, K. (1982)
"Impacts and Implications of Regional Labour Preference Policy." In *Proceedings, Part B, International Conference on Oil and the Environment*, Halifax, Canada, August 16-19, (Memorial).

341. Storey, K. (1982)
"The Impacts of Newfoundland Offshore Labour Preference Policy." Paper presented at the *International Conference on Oil and the Environment*, Halifax, Aug. 16-19, (Memorial).

342. Storey, K. (1982)
"Problems of Assessing Socio-economic Impacts of Offshore Developments." A paper presented to the *International Conference on Social Impact Assessment: Advancing the State of the Art*, Richmond, B.C., (Memorial).

343. Storey, K. (1982)
"Socio-economic Impacts of the Burgeo Road, Newfoundland." Presented to the Poster Session, *International Conference on Social Impact Assessment: Advancing the State of the Art*, Richmond, B.C., (Memorial).

344. Storey, K. (1984)
Hibernia: Demographic Impacts. Background Report to Mobil Oil Canada Ltd., Hibernia Environmental Impact Assessment, prepared for Community Resource Services Ltd., St. John's, November, (Memorial).

345. Storey, K. (1984)
"Perceived Perceptions: Perspectives and Expectations About Offshore Petroleum Development in Newfoundland". *Proceedings, Arctic Petroleum Operators Association Workshop "Frontier Update '84"*, Fairmont, British Columbia, May 6-9, (Memorial).

346. Storey, K. (1985)
"Community Attitudes and Impact Assessment Practice: Examples from the Hibernia Case." Paper presented to the *Annual Conference of the Canadian Association of Geographers*, Trois Rivières, Quebec, May 17-19, (Memorial).

347. Storey, K. (1985)
"Family Adaptations to Offshore Oil and Gas Employment: Study Update." Paper presented to the International *Association for Impact Assessment, Special North American Conference on Impact Assessment in Resource Development*, Calgary, Alberta, September 19-20, (Memorial).

348. Storey, K. (1985)
"From Prediction to Management: Increasing the Effectiveness of SIA." Paper presented to the *Annual Conference of the International Association for Impact Assessment*. Utrecht, Holland, June 27-28, (Memorial).

349. Storey, K. (1985)
Hibernia: Demographic Impacts. Background Report to Mobil Oil Canada Ltd., Hibernia Environmental Impact Assessment, prepared for Community Resource Services Ltd., St. John's, May, (Memorial).

350. Storey, K. and D. Draper (1984)
Towards Comprehensive Land Use and Resource Management in Newfoundland. St John's: Environment Canada, Canadian Forestry Service, (Memorial).

351. Storey, K., C. Dunsmuir *et al.* (1985)
Petroleum Related Socio-Economic Issues — Atlantic Canada. Ottawa: Environmental Studies Revolving Fund Report No. 003, March, (Memorial).

352. Storey, K. and J. Lewis (1985)
"Family Life Adaptations to Offshore Oil and Gas Employment: Progress Report." Paper presented to the *International Conference on Women and Offshore Oil*, Institute of Social and Economic Research, St. John's, Newfoundland, September 5-7, (Memorial).

353. Storey, K. and M. Scarlett (1982)
Dry Pond Proposed Hydro Electric Development Socio-Economic Study. A report prepared for Newfoundland and Labrador Hydro. St. John's: Memorial University of Newfoundland, 78 pp., (Memorial).

354. Storey, K. and M. Scarlett (1982)
Impacts on Community Services and Social Infrastructure of the Development of Hibernia. Report to Mobil Oil Canada Ltd. St. John's: Memorial University of Newfoundland, 428 pp., (Memorial).

355. Storey, K. and M. Scarlett (1982)
The Burgeo Road: A Study of Social and Economic Impacts. Summary of a two stage report prepared for the Federal Department of Regional Economic Expansion and the Provincial Department of Transportation, St. John's, (Memorial).

356. Swinnerton, G.S. (1982)
Recreation on Agricultural Land in Alberta. Edmonton: Environment Council of Alberta, (Alberta).

357. Thouez, J.-P. (1984)
La géographie du travail et la santé, *Espace, populations, société*, nº 3, p. 47-88, (Montréal).

358. Thouez, J.-P. and B. Singh (1984)
"Perceptions and Attitudes to Air Pollution in an Asbestos Mining Town." *Geo Journal*, 8, 2, 123-128, (Montréal).

359. Tester, F.J. (1982)
"Client Centered Community Impact Assessment." *Alternatives*, Spring/Summer, (Calgary).

360. Tester, F.J. (1982)
"Pyschoanalysis and Social Impact Assessment." Opening address to the *International Conference on Social Impact Assessment, State of the Art*, Vancouver, October 24-27; reprinted in *SIA Bulletin*, Winter 1984, (Calgary).

361. Tester, F.J. (1984)
"Teaching SIA: Addressing Consciousness," *Social Impact Assessment*, (Calgary).

362. Tester, F.J. and W. Mykes (1981)
Social Impact Assessment: Theory, Method and Practice. Calgary: Detselig Enterprises, Ltd., 380 pp., (Calgary).

363. Threadkell, B. (1982)
Environmental Assessment and Electric Power Generation in the Prairie Provinces: A Comparison of Manitoba Hydro, Saskatchewan Power Corporation and TransAlta Utilities. Master of Natural Resources Management Thesis. Winnipeg: University of Manitoba, Natural Resources Institute, (Manitoba).

364. Torgerson, D. (1980)
Industrialization and Assessment: Social Impact Assessment as a Social Phenomenon. Toronto: York University Publications in Northern Studies, (Trent).

365. Torgerson, D. (1981)
"SIA as a Social Phenomenon: The Problem of Contextuality." In F. Tester and W. Mykes (eds.), *Social Impact Assessment: Theory, Method and Practice*. Calgary: Detselig Enterprises, Ltd., (Trent).

366. Torgerson, D. (1986)
"Between Knowledge and Politics: Three Faces of Policy Analysis." *J. of Policy Sciences*, 19, (in press), (Trent).

367. Townsend Gault, I. (1983)
Petroleum Operations on the Canadian Continental Margin - The Legal Issues in a Modern Perspective. Calgary: Canadian Institute of Resources Law, 113 pp., (Dalhousie).

368. Townsend Gault, I. (1983)
The International Legal Context of Petroleum Operations in Canadian Arctic Waters. Calgary: Canadian Institute of Resources Law, 76 pp., (Dalhousie).

369. Tremblay, G. (1982)
Étude des critères d'évaluation écologiques d'un site et étude des critères d'évaluation écologiques des répercussions des aménagements des sites, Maîtrise de science, Montréal, Université du Québec à Montréal, (UQAM).

370. Troughton, M.J. (1985)
"Impacts of Agricultural Industrialisation on the Physical Base, Structure and Operation of Farming." Paper presented to the *Association of American Geographers Annual Meeting*, Detroit, April, (Western Ontario).

371. Troughton, M.J. (1985)
The Impacts of Industrial Agriculture in Southwestern Ontario. Guidebook for participants at International Conference, 78 pp., (Western Ontario).

372. Troughton, M.J. (1985)
Stresses on Land in Southwestern Ontario. Presentation to Senior Alumni, University of Western Ontario, November, (Western Ontario).

373. Troughton, M.J. (1986)
"The Nature and Environmental Impacts of the Industrialisation of Agriculture." Chapter 14 in P. Wilkinson and G. Milburn (eds.), *Environmental Issues*. London: Althouse Press, (in press), (Western Ontario).

374. Troughton, M.J. and N.B. Finkelstein (1984)
"Structural Change in and Impacts of the Aggregate Industry in the London Region." In *Proceedings G.I.R.M.S.*, 15, (1984-1985), pp. 32-62, (Western Ontario).

375. Troughton, M.J. and J.S. Wolfe (1985)
Agricultural and Resource Development in Ontario's Near North. Guidebook for participants at International Conference, 150 pp., (Western Ontario and Guelph).

376. Truscott, S. (1982)
The Effects of Industrialization in Nonmetropolitan Areas: Growth Theory vs. Dependency Theory. Master's Thesis. London: University of Western Ontario, Department of Sociology, (Western Ontario).

377. Ugo, U. (1982)
LNG and Nigerian Gas Market: An Economic Analysis. Calgary: University of Calgary, MS CRE Program, (Calgary).

378. Vaillancourt, J.-G. (1982)
Évolution, diversité et spécificité des associations écologiques québécoises: de la contre-culture et du conservationisme à l'environnementalisme et à l'écosocialisme, *Sociologie et sociétés*, vol. XIII, n°. 1, p. 81-98, (Montréal).

379. Vaillancourt, J.-G. (1982)
Les interventions du groupe Écologie Humaine d'Hydro-Québec, dans *Les actes du colloque annuel de l'A.C.S.A.L.F.* Laval, Québec, Éditions Coopératives Albert St-Martin, (Montréal).

380. Vaillancourt, J.-G. (1982)
Mouvement écologiste, énergie et environnement: essais d'écosociologie, Montréal, Editions Coopératives Albert St-Martin, 262 p., (Montréal).

381. Vaillancourt, J.-G. (1982)
Le mouvement écologiste québecois, dans S. Proulx et P. Vallieres, *Changer de société*, Montréal, Éditions Québec-Amérique, p. 143-163, (Montréal).

382. Vaillancourt, J.-G. (1982)
Le mouvement écologiste québecois, Communication présentée au 6e *Colloque du Conseil québecois de l'environnement* et publiée dans *De Toute Urgence*, vol. XII, n° 2, p. 231-243, (Montréal).

383. Val, E. and J.G. Nelson (1983)
"Offshore Petroleum Development and Fisheries Interactions." *Geo Journal*, 7, 3, 247-260, (Waterloo).

384. Veeman, T.S. (1982)
"Discussion: Economics of Land Use." *Canadian Journal of Agricultural Economics*, Proceedings Issue, 7 pp., (Alberta).

385. Viau, A. (en cours)
Les pluies acides: impact sur un milieu forestier, Thèse de doctorat, Département de géographie, (Montréal).

386. Waldbrook, L. (1985)
Hunter Attitudes and Management Policies Towards Deer Hunting. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

387. Wall, G. and A. Mathieson (1982)
Tourism: Economic, Physical and Social Impacts. London: Longman, 208 pp., (Waterloo).

388. Warren, M. (in preparation)
"A Methodology to Assess Coastal Zone Sensitivity to Oil Spills." M.A. Thesis, Department of Geography, (Memorial).

389. Weinberger, P. and R. Greenhalgh (1984)
"Ecotoxicity of Adjuvants Used in Aerial Spraying." In W.Y. Garner and J. Harvey Jr. (eds.), *Chemical and Biological Controls in Forestry*. Washington: A.C.S. Series #238, pp. 351-363, (Ottawa).

390. Weinberger, P. and T.C.S.S. Murthy (1985)
"Uranium Uptake and its Effects on the Germination and Early Growth of Some Crop Species." *AECL Monograph* TR-329, pp. 1-73, (Ottawa).

391. Weinberger, P., R. Greenhalgh, D. Sher and M. Ouellette (1982)
"Persistence of Formulated Fenitrothion in Distilled, Estuarine and Lake Water Microcosms in Dynamic and Static Systems." *Bull. Environ. Contam. Toxicol.* 28, 484-489, (Ottawa).

392. Wellman, B. (1982)
"Studying Personal Communities." In N. Lin and P. Marsden (eds.), *Social Networks and Social Structure*. Beverly Hills: Sage, (Toronto).

393. Whitelaw, G. (1984)
The Relationships Between Soil Properties and Alkalinity as Influenced by Acid Deposition. Master of Arts Thesis. London: University of Western Ontario, Department of Geography, (Western Ontario).

394. Whitney, J.B.R. (1982)
"Urban Energy and its Impact on the Hinterland: A Conceptual Approach." In B. Spooner (ed.), *Ecological Problems of Human Settlements in Arid Regions*. Paris: MAB Technical Note, 6 pp., (Toronto).

395. Whitney, J.B.R. (1985)
"The Impact of Fuelwood Use on Environmental Degradation in the Sudan." In M. Horowitz (ed.), *Lands at Risk in the Third World: Local Perspectives*. New York: Westview Press, (Toronto).

396. Whitney, J.B.R. (1985)
"Integrated Economic-Environmental Models in Environmental Impact Assessment." In V.W. Maclaren and J.B.R. Whitney (eds.), *New Directions in Environmental Impact Assessment in Canada*. Toronto: Methuen, pp. 53-86, (Toronto).

397. Whitney, J.B.R. and C.M. Dufournaud (1982)
"Ecological Input-Output Models." In D. Burton and R. White (eds.), *Ecoville: Urbanization in the Context of Eco-development*. Toronto: University of Toronto, Institute for Environmental Studies, pp. 133-158, (Toronto and Waterloo).

398. Whitney, J.B.R. and C.M. Dufournaud (1982)
The Simulation of the Urban-Rural Ecological System: The Simurcol Model. Project Ecoville, Working Paper No. 1. Toronto: University of Toronto, Institute for Environmental Studies, (Toronto and Waterloo).

399. Whitney, J.B.R. and C.M. Dufournaud (1983)
"The Impact of Urbanization on the Environment: An Ecological Imput-Output Model." In R. White and I. Burton (eds.), *Ecoville: Approaches to the Study of Environmental Implications of Contemporary Urbanization*. Paris: UNESCO, Man and Biosphere Programme Technical Note No. 12, pp. 69-81, (Toronto and Waterloo).

400. Whitney, J.B.R., C.M. Dufournaud and B.W. Murck (1985)
"Energy Use and the Environment in the Sudan." Toronto: Project Ecoville, Institute for Environmental Studies, University of Toronto, Working Paper No. 22, (Toronto and Waterloo).

401. Whitney, J.B.R., C.M. Dufournaud and B.W. Murck (1985)
"Simulation of a Policy Aimed at the Reduction of Wood Use in the Sudan." *Environment and Planning* A, 17, 1231-1242, (Toronto and Waterloo).

402. Whitney, J.B.R. and M. Jones (1984)
"The Ecoville Toronto Simulation Model." In Y.H.Yip and K.S. Sim (eds.), *Urbanization and Ecodevelopment with Special Reference to Kuala Lumpur*. Kuala Lumpur: Institute of Advanced Studies, University of Malaysia, pp. 257-280, (Toronto).

403. Whitney, J.B.R. and V.W. Maclaren (eds.) (1985)
Environmental Impact Assessment: The Canadian Experience. Toronto: University of Toronto, Institute for Environmental Studies Monograph Series, No. 5, 197 pp., (Toronto).

404. Whitney, J.B.R. and V.W. Maclaren (1985)
"A Framework for the Assessment of EIA Methodologies." In J.B.R. Whitney and V.W. Maclaren (eds.), *Environmental Impact Assessment: The Canadian Experience*. Toronto: University of Toronto, Institute for Environmental Studies Monograph Series, No. 5, pp. 1-31, (Toronto).

405. Whitney, J.B.R. and A.I. Mograby (1982)
"Development versus Conservation: the Case of Dinder National Park, Sudan." *Environmental Conservation*, Fall Issue, (Toronto).

406. Whyte, A.V. and I. Burton (1980)
Environmental Risk Assessment, SCOPE 15. Chichester: John Wiley and Sons, 157 pp., (Toronto).

407. Whyte, A.V. and I. Burton (1982)
"Public Perception of Risk." In *Living with Risk: Environmental Risk Management in Canada*. Toronto: University of Toronto, Institute for Environmental Studies, Monograph No. 3, (Toronto).

408. Wilkie, A. (1981)
"Who Assesses the Impacts of Major Energy Projects: A Scottish Case Study — Mossmorran." A paper presented at *The Human Side of Energy Conference*, Edmonton, August, (Technical University of Nova Scotia).

409. Wilkie, A. (1982)
"Cities: Their Response to Resource Development." A paper presented to the *Canadian Institute of Planners Conference*, Ottawa, June, (TUNS).

410. Wilkie, A. (1982)
"Ethical and Social Impacts of Offshore Development in the Arctic." A paper presented at the *First Atlantic Student Pugwash Conference*, Dalhousie University, Halifax, May, (TUNS).

411. Williams, P.J. and M.W. Smith (1980)
Preliminary Report on a Review of Environmental Impact Statement and Supporting Documents, Relating to Melville Island Components of Arctic Pilot Project. Prepared by Peter J. Williams and Associates Ltd., Ottawa, for Federal Environmental Assessment Review Office, 24 pp., (Carleton).

412. Williams, P.J., T.P. Wilkinson and M.W. Smith (1980)
Preliminary Report on a Review of Environmental Impact Statement and Supporting Documents, Relating to Norman Wells Oilfield Expansion and Pipeline Project. Prepared by Peter J. Williams and Associates Ltd., Ottawa, for Federal Environmental Assessment Review Office, 20 pp., (Carleton).

413. Wilson, J.M. and M. Cann (1983)
"Uprooting and Rerooting; Some Reflections on the Columbia River Project." *B.C. Studies*, 58, Summer, (Simon Fraser).

414. Woo, M-K. and P. Waylen (1983)
Prediction of Annual Floods in Northern Ontario Basins. Hamilton: McMaster University, Technology Assessment in Subarctic Ontario, Report Number 2, (McMaster).

415. Wood, K.S. (1981)
"Managing Social Impacts from Large Scale Industrial Complexes: Norway's Prospective Act Exploration North of 60° N." In F.J. Tester and W. Mykes (eds.), *Social Impact Assessment: Theory, Method and Practice.* Calgary: Deselig Enterprises, Ltd., pp. 269-298, (Toronto).

416. Wright, D.S. (1983)
Preparing an Environmental Impact Statement: A Case Study of the Midwest Lake Uranium Project. Master of Science Research Paper. Toronto: University of Toronto, Department of Geography, (Toronto).

STUDENT PAPERS/ÉCRITS D'ÉTUDIANTS

During our survey we asked professors to submit titles of works by their students which they judged to have the merit and relevance for inclusion in the Directory. We received lists of papers by individual and teams of students which examined a wide range of activity and thought from diverse academic perspectives — on case studies, EIA methodology and various other aspects of EIA. Masters theses or comparable work are included in the Bibliography.

Lors de notre enquête, nous avons demandé aux professeurs de nous soumettre les titres des travaux effectués par leurs étudiants qui, selon eux, méritaient d'apparaître dans le Répertoire. Nous avons reçu des nombreux écrits par des étudiants, individuellement et en groupe, qui ont revu une grande gamme d'activités et de pensées de diverses perspectives académiques, couvrant des sujets tels que des cas réels, la procédure d'évaluation des incidences environnementales et divers autres aspects de l'évaluation environnementale. Les thèses de maîtrise et autres travaux du genre sont inclus dans la bibliographie.

CARLETON UNIVERSITY

Howard, G. (1982)
"Scientific Basis for Environmental Impact Assessment." Department of Integrated Science Studies.

DALHOUSIE UNIVERSITY

Institute for Resource and Environmental Studies (1982)
"Fundy Tidal Power Development: A Proposal for an Environmental Assessment". A Group Term Paper for the course IRES 5001B, "Environmental Assessment."

ÉCOLE POLYTECHNIQUE DE MONTRÉAL

Travaux pratiques présentés dans le cours 1.6286, "Impacts des projets sur l'environnement" offert par la section du génie de l'environnement.

Bubic, I., J. Dandurand, L. Dauphin, L. Lepage, G. Parent et J. Phaneuf (1982)
Étude d'impact sur le projet d'implantation d'un centre d'élimination des biphényles polychlorés par la compagnie CEBIPOL Ltée dans la région montréalaise: étude biophysique, 82 p.

Gadoury, G., J.-M. Lewis et L. Rancourt (avril 1982)
Étude d'impact sur le projet d'implantation d'un centre d'élimination des biphényles polychlorés par la compagnie CEBIPOL Ltée dans la région montréalaise: choix de l'emplacement, 28 p. en plus de 5 annexes.

UNIVERSITÉ LAVAL

Rapports critiques sur des études d'impact rendues publiques. Ces travaux ont été produits dans le cadre du cours GC1-62994, "Impact des projets sur l'environnement," Département de Génie civil.

Dion, A., M. Grenier et D. Groulx (1982)
Projet d'extension du Port de Québec (Évaluation impact social).

Poiré, G. et J.-L. Ratté (1982)
Projet d'extension du Port de Québec (étude hydrodynamique et sédimentalogique).

Boily, L., M. Lafond, E. Poiré, Y. Pouliot, et F. Vinet (1982)
"Projet d'extension du Port de Québec (aspects biologiques)."

Picard, M. et B. Badibanga (1982)
Projet d'extension du Port de Québec (aspects esthétiques, visuels et patrimoniaux).

Deschênes, J. et R. Soucy (1982)
Projets d'extension du Port de Québec (qualité du milieu).

NOVA SCOTIA COLLEGE OF ART AND DESIGN

Arno, M. (1982)
"The Impact of Offshore Oil and Gas Development on Settlements." Undergraduate Thesis. Department of Environmental Planning.

Department of Environmental Planning (1982)
"Assessment of Labour Force Impacts in the Eastern Shore Region of Nova Scotia From the Proposed Development of Offshore Gas — Economic and Social Impact Project", EP111 Group Project.

RYERSON POLYTECHNICAL INSTITUTE

Fior, J.B. (1983)
"A Review of the Ontario Environmental Assessment Board." Fourth Year Research Paper. Department of Geography.

Scheide, R.J. (1982)
"The Implications of Urban Development Upon Kortright Waterfowl Park — Guelph, Ontario." Fourth Year Research Paper. Department of Geography.

SAINT MARY'S UNIVERSITY

Andries, D. (1985)
"The Impact of the Nova Scotia Beach Protection and Preservation Act upon the Mining of Beach Sand and Gravel." Bachelor of Arts Thesis. Department of Geography.

UNIVERSITÉ DE SHERBROOKE

Casgrain, V. (1982)
Analyse d'impact visuel d'un couloir de transport hydroélectrique. Rapport de B. Sc., Département de géographie, 85 p.

Chartrand, L. (1982)
Projet d'une Station de Métro de Surface à Pointe-aux-Trembles; études d'impact. Rapport de B. Sc., Département de géographie, 49 p.

Saint-Onge, M. (1982)
Impact économique des Chutes Darwin sur la municipalité de Rawdon. Rapport de B. Sc., Département de géographie, 43 p.

UNIVERSITY OF TORONTO

Hare, K. and S. Renzetti (1982)
"The Exemption Process in the Context of the Environmental Assessment Act." Project for INI 420I, "Environmental Research Seminar", Innis College.

Kinzinger, L. and L. Kneeshaw (1983)
"Public Notice Procedures Under the Ontario Environmental Assessment Act." Project for INI 420I, "Environmental Research Seminar", Innis College.

UNIVERSITY OF WATERLOO

Dodds, T. (1982)
"A Quantitative Evaluation Methodology for Scenic Quality in Pukaskwa National Park." Bachelor's Thesis, School of Urban and Regional Planning.

UNIVERSITY OF WESTERN ONTARIO

Jones, B.D. (1982)
"A Study of the Nanticoke Industrial Development." Bachelor's Thesis, Department of Geography.

Smith, B.A. (1982)
"Citizen Participation in Electrical Power Planning in Southwestern Ontario: An Evaluation of Ontario Hydro's Public Participation Program." Bachelor's Thesis, Department of Geography.

UNIVERSITY OF WINDSOR

Edwards, M. (in preparation)
"Development of a Method of Post-Mining Evaluation Designed for High Man:Land Ratio Areas." CEARC Graduate Research Contract 1985-86, Department of Geography.

Skinner, W. (in preparation)
"Environmental Responses to Natural and Anthropogenic Changes in Climate in the St. Clair River Delta". CEARC Graduate Research Contract 1985-86, Department of Geography.